POLICY MEASURES FOR LOCAL ECONOMIC AND SOCIAL DEVELOPMENT BASED ON NETWORKS OF SMALL FIRMS

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1. INDUSTRIAL DIVERSITY

Many researchers and practitioners, facing the recent trend towards internalisation of markets and competition based on innovative products and high quality standards, have come to the conclusion that there is no single best way to organise industrial production. The chain of conception, execution, marketing and commercialisation of a specific finished product can be successfully organised by firms in a variety of different ways, each with its own particular combination of techniques, information transfer methods, incentives, decision-making models, control procedures, inter-firm relationships, and interactions between firms and their environment.

1.1 Diversity of Approach: the example of the clothing industry

There have been examples to support this finding for a long time, but they were largely overlooked. Today they are more and more evident. The knitwear and clothing industrial district of Carpi in the Emilia-Romagna Region (Italy) is a well-known case of almost complete vertical disintegration. It has 12 000 employees working in 750 independent micro "final firms" and in 1 900 local micro subcontractors. Together they produce and sell to the domestic and international retail systems products similar to those of the more famous Benetton network-firm in Treviso (Italy). The Benetton "system", by contrast, is an example of quasi-vertical integration: it comprises a single 1 600 employee final firm (a single "head") which controls in different ways the whole production process, and 380 local small subcontractors with 8 000 employees that work solely for Benetton. In turn, Benetton competes with the Lacoste brand produced by Devanlay, a corporation that has large plants with 4 000 employees in Troyes (France) and a relatively high level of vertical integration. Finally, the district of Carpi, Benetton, and Lacoste each compete with the 250 firms agglomerated in Leicester, with those in Nottingham (both in the UK), with those in Roanne (France), in Alcoy (Spain), and in Vale Do Ave (Portugal), each of which has its own distinctive features. Another example is the production of panty-hose: 400 firms in or near Castel Goffredo (Italy), with an average of 20 employees and a low level of vertical integration, accounts for more than 50 per cent of European production and compete successfully with the multiplant DIM owned by the US multinational Sarah Lee, as well as with famous European vertically integrated, medium-sized firms (Well, Le Bourget, Dore' Dore', Walford). The apparently strange thing is that Castel Goffredo is a town of only 7 800. Neither near major highways or a transportation hub nor close to the Italian fashion centres, Castel Goffredo does not fit any standard definition of an appealing industrial location. Similar cases appear in footwear where the Spanish local productive systems of Elche, Elda, and Villena in Valencia compete with the Italian industrial districts of Civitanova Marche, Fermo, Montegranaro, as well as with the famous English producer, Clarks. An almost endless list could follow with examples for mechanics, ceramic tiles, toys, and so on.

The point is that these different forms of organisation of the industrial input-output chain -- industrial districts as well as network-firms, Japanese conglomerates, traditional vertical integrated firms, etc. -- can have different 'governance structures', i.e., different practices whereby interdependent economic actors (manufacturers, suppliers, distributors, etc.) co-ordinate or control their activities and interactions. They can be composed of one or many production units, and owned by one or several individuals. But in each case production units do not necessarily deal with each other through anonymous market relationships, for instance, by means of price-signals. They enter into a variety of co-ownership agreements or informal conventions to set standards, manage adaptation to uncertain and changing conditions, define incentives and sanctions, organise information flows, and resolve conflicts. In other words, a new unit of analysis is needed in dealing with employment and industrial development that can take into account and valorise the range of interactions among firms in an industry. A growing number of researchers and practitioners are trying to address this problem by calling the ensemble of activities of the

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industrial chain and the governance structure that rules their inter-organisational relationships a productive system.

Yet the question remains; how can such industrial diversity, such a wide range of apparently successful productive systems be explained? Or put another way, why has no single mode of production proven itself clearly superior to the others and been adopted as the universal standard?

There are at least two forces that maintain and shape diversity in the industrial and employment landscape. One has to do with 'creative destruction', the other with the 'memory of the future'. For the first force, the classical reference in economic literature is, of course, Schumpeter who pointed out that firms prefer not to fight against their competitors on different fronts at the same time. (In addition, entrepreneurs do not like to become administrative co-ordinators of a given industrial apparatus.) So they try to establish a perpetual process of innovation and change inside the firm, around its boundaries, and in its relationships with partners and suppliers. They compete with respect to new inputs, new processes and technology, new sources of supply, new organisational strategies, and new product designs in order to attain a decisive quality and/or cost advantage. As a result, this ongoing process of strategic structural change induces industrial mutation that continuously shapes new markets, as well as new forms of industrial organisation, and encourages diversity in the economic structure from within.

For the second force the classical reference is Penrose, as well as a large, more recent, economic literature dealing with the role of time and space in shaping industrial organisation. Let's start with time. The idea is that the management's capacity to plan and create is limited by the nature of teamwork. Teamwork takes time to establish because individual workers are more valuable the more they can enhance the knowledge and competence of fellow-workers and improve general and specific working practices. As a consequence, the firm is more than a static collection of individuals, resources, and objective knowledge. It is a dynamic and complex cultural system: a specific sedimentation of habit, skills, routines and cultures embedded in a team environment. Thus, firm strategies are somehow path dependent. A large part of the decision process is the construction, evaluation and modification of the frame of reference itself. In other words, the 'creative destruction' in the market involves in-house co-operation and care for the past. Every 'past' being specific, firms are different.

Let us now introduce the concept of space. Firms are not alone. The form, the rhythm and content of their "development" are as much the result of the local fabric as of their own individual 'cultures'. Of course, this is due to the cost advantages that a firm gets from its proximity to sources of raw material, suppliers, subcontractors and customers, as well as ports, airports, etc.. But other competitive advantages can come from regional characteristics that define the "environment" in which firms operate and develop. Examples among these characteristics are:

- The quality and the ease with which labour can be used in production. From a given regional population and a given national legal framework[1], the labour supply (number of individuals able for employment and their hours of work) is influenced by the availability of alternative forms of subsistence and by the local social organisation: the family organisation (structure, cohesion, women's roles and opportunities), domestic work, the level of family income, the efforts made by workers to start up by themselves, social attitudes and the level of unionisation;

1. Including the social security system as well as the statutory regulation of the employment of women and children.

- *The ease with which transactions can be realised and specialisation undertaken.* The sense of belonging to a community is a basis for the sharing of community conventions, which help in establish the trust necessary to collaborate in the production of highly specialised goods and services. Without trust, transaction costs are high, lawyers flourish and contracts take time and effort to be written. Moreover, division of labour between firms[2] is limited, as well as investments constrained, by the fear that any party to an exchange can hold up the others, which makes specialisation and flexibility difficult to establish;

- *The ability to use and produce innovation.* An endowment of skills, embedded in the regional fabric through long term historical processes, and nurtured by formal and on the job training, helps the adoption of technical advancements. Skilled workers play a major role in deciding whether and how new techniques and machines are to be used. For example, they are able to set up and operate precision machinery and know how to adapt existing machinery to meet ever-changing operating requirements. In addition, a high diffusion of high skills in the local fabric encourages the establishment of innovative practices and design changes by easy communication among a large population sharing the same technical language and reasoning. In these cases, specialised productive units are able to learn from each other and to resolve problems over product specifications;

- *The flexibility in adjust to structural change.* The creation of local small firms and a ready supply of new entrepreneurs are important sources of innovation and ability to face structural changes. Firms can face restructuring by means of external linkages rather than internal shocks. Moreover, the opportunity for workers to start their own businesses provides a specific incentive to be committed in the production process: i.e., to play the role of problem-solver, rather than simply executor of pre-defined tasks. The structure of ownership of productive activity and the decision to start a business are conditioned to a large extent by the social climate prevailing in a given society. In some cases, community members have to pay considerable 'social costs' for vertical mobility. In others, the community assigns a valuable place to economic action and the way in which action is sustained;

- *The efficiency of the internal organisation of productive units.* Division of labour inside firms -- as well as workers' attitudes and commitment -- is never a simple technical matter. For example, the efficient size of the productive unit is determined on the one hand by technical factors such as economies of scale and the benefit of vertical integration, and on the other hand by the level of unionisation[3] as well as the type of industrial relations. Looked at over a long period, the division of labour inside firms is the result of a complex clash of different visions of society backed by economic and political power. Different work groups have different ideas of success or career, so they differ about what defines dignity, which jobs are ill-considered and which enjoy prestige. In consequence they behave differently as actors in shaping the work place, in negotiating their wages and possibly in deciding to start up by themselves.

Other examples could be mentioned, but let us simply add that what lies "behind the market", which is a result of the slow accumulation of routines in everyday life, is a basic determinant of industrial

2. Measured by the level of vertical integration.

3. Classic textbooks of industrial economics consider the level of unionisation as a crucial "basic condition" -- along with raw materials, product durability and substitutes -- in determining the market structure and the conduct and performance of firms. See SHERER F. (1980), *Industrial Market Structure and Economic Performance*, Chicago, Rand McNally

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structure and a source of competitive advantages and disadvantages. This is particularly true for small firms that, due to their size, are more dependent on the external environment[4]. The point is that routines and anthropological characteristics of a population take time to become settled, but they also take space: they are often rooted in a particular place and can produce a social spatial homogeneity. Sense of belonging is often related to a sense of place. In turn, the transfer and diffusion of skills are often confined within borders by the nature of some kinds of information; i.e., when it is difficult to codify, store and diffuse information, knowledge can sometimes only be acquired by participating in the process of generating the information. Models of reproduction and social mobility of the labour force are often limited in their diffusion by the slow movements of people. Once again, there is scope here for diversity -- a regional diversity -- in conditioning the organisation of firms.

Is such diversity likely to disappear? Are different types of productive systems going to converge into a new universal industrial organisational pattern?

This question merits a longer and more in-depth discussion than is possible here. However, for the present analysis it seems reasonable to make the hypothesis that, at least in the medium term, selection through competition is not going to impose a unique form of industrial organisation, a "one best way" of production that will gain a hold over the others. Of course, changes in technology and needs, operating through competition and creative destruction, can modify the range of possibilities, eventually increase the constraints and reduce the choices amongst different forms of industrial organisation. But, for at least two reasons, in a reasonable future there are still different possible trajectories open to social choice, i.e., to conceptualising, understanding and practising technology, organisation and economic institutions. First of all, actors' representation of their environment as well as the local environment itself are phenomena that change with a slow cadence, with the rhythm of what Braudel has called 'long run' history. Secondly -- and more important -- they are produced more than merely existing as precondition to economic activity. In other words, productive systems create their own environment. So, for the future as well as in present time, employment and industrial landscape is going to be explained not merely by "local" and "national" spatial differences in wages, in regulatory practices on competition, in monetary systems, but by phenomena lying "behind the market", as well. The point is that different types of productive systems are going to coexist given that they will be determined as much by the evolution of technology and the evolution of consumers' needs and tastes, as by their insertion in different economic territorial spaces and by the individuals' and organisations' representation of the environment in which they operate. If the latter are going to keep their differences, they will reproduce a diversity of forms of industrial organisation, each form with its own specific strengths and weaknesses.

These findings have three main implications for policy issues. The first one is that the productive system is a relevant object of policy in itself. A focus on it has to take into account not only firms, but both the linkages and input-output relations among firms, and the relationships between firms and their own environment. In fact, while the old competitiveness paradigm was based on the notion that competitiveness is driven by costs, mainly input costs, this different perspective suggests that a crucial problem is the way in which one can efficiently and effectively use those inputs to determine competitive success.

The second implication is that efforts should be made to design specific policy instruments according to the specific characteristics of different productive systems. It is clear that a vertically integrated large firm has problems and needs that are considerably different from those of clusters of small and micro-firms, or network-firms, or global firms, and so on.

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4. The fact that these sources and determinants of competition are often invisible for traditional accounting procedures helps to explain the success of some unexpected regions and the growth paths of local and regional economies.

The third implication is that not only policy measures, but also the appropriate process to implement the policy may vary with respect to different types of productive system. It is clear that, together with national policies to promote competitiveness, regional and local policy, carefully tailored to the specific characteristics of productive systems and areas, are needed and can play a starring role[5].

The focus of this article will be on policy for a type of employment and industrial development based on local productive systems of small firms. It first analyses to what extent we can expect to see a demand for this type of policy, which is the result of both an explicit demand and the shortcomings of traditional approach in local economic and employment development. Then, it discusses two stylised "models" and interesting cases of local policies originally adopted to revitalise productive systems. The aim is not to assess the effectiveness of the policies pursued, as much as to lay bare the model of industrial and employment development around which the measures introduced were constructed.

2. LOCAL PRODUCTIVE SYSTEMS OF SMALL FIRMS AND POLICY

The policy implications described above are particularly relevant in the case of local productive systems of small firms, i.e., those with mainly indigenous employment and industrial development based on small, flexible and specialised firms -- "industrial districts", "industrial quarters", "urbanised counties", and so on. Local actors clearly want to speed up the process of formulating policy for these systems, either to create them or maintain those that already exist. Regions without industrial districts understandably hope to emulate successes achieved elsewhere. Where such clusters do exist, local policy-makers and practitioners are asking how it is possible, in their specific conditions, to consolidate employment and industrial development and strengthen competitiveness and the ability to innovate.

2.1 A demand coming from existing local productive systems of small firms in developed countries

There are at least three reasons that justify the demand for a coherent framework of customised policies that comes from existing local productive systems of small firms.

First of all, they represent an important part of the economic structure of industrialised countries. The Italian industrial districts[6] are probably the best known example (Box 1). In both developed and developing countries, they have gained an international reputation as a source of suggestions for effective locally-based forms of small firms organisation[7]. Such a reputation has to do with the economic

5. Michael Porter is convinced that "all around the world in country after country, the locus of competitiveness success is increasingly local. The ability to create a unique concentration of local skills, of local technology, of local infrastructure, of local suppliers and of local competitors in the relevant fields gives you the ingredients for competitive success".

6. "On peut décrire le district industriel comme un grand complexe productif où la coordination des différentes phases et le contrôle de la régularité de leur fonctionnement ne sont pas assujettis à des règles preétablies et à des mécanismes hiérarchiques (comme c'est le cas dans la grande entreprise privé ou dans le combinat soviétique), mais sont soumis à la fois au jeu automatique du marché et à un système de sanctions sociales infligées par la communauté" (...) "Le district industriel est une entité socio-territoriale caractérisée par la présence active d'une communauté de personnes et d'une population d'entreprises dans un espace géographique et historique donné" (Becattini).

7. A crucial role in building the international reputation of industrial districts was played by the International Institute for Labour Studies which embarked on a programme of small firm studies in the mid-1980s. From the beginning the Institute paid special attention to the most developed Italian industrial districts because they demonstrated unusual economic success -- not merely in the Italian domestic market but also

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performance of many Italian industrial districts. After the Second World War, they contributed greatly to the dramatically successful structural change and development of North-Central Italy, where some regions, notably Emilia-Romagna, were transformed from bottom-ranked, rural regions into some of the most prosperous regions in Europe[8].

Nevertheless, the industrial district is neither an exclusive Italian prerogative nor the only type of local development based on small, flexible and specialised firms. First of all, Alcoy, Castellon, Mondragon (Spain), la Vale de l'Avre, Oyonnax, Cholet (France), Sakaki (Japan) -- among others -- are cases from countries other than Italy which may be added to the inventory of industrial districts. Moreover, many local productive systems of small firms have similar industrial structures, enterprise behaviour and economic performance as those of industrial districts, even when they lack some of an industrial district's typical characteristics: for example, the prevalence of only one specific industrial activity in the local economy (see Box 1). In Italy, these 'quasi-districts' (the Valdarno, the Veronese, the Bresciano, etc.) account for at least the same employment of the 'original' ones[9], and in other OECD countries they are more diffused than districts are. Finally, specialised industrial quarters of large and medium size towns (the Sentier in Paris, Ridgewood in New York, Route 128, the via Emilia "linear town" in Emilia-Romagna, part of the Washington-Baltimore corridor and part of greater Los Angeles), as well as multiple specialised regions with a diffused "rural -- urban -- *continuum*" (Baden-Würtemmberg in Germany, West Jutland in Denmark, Valles Oriental in Spain, parts of Pennsylvania in the USA) have similar local productive systems.

The point is that many industrialised countries already base a part -- some a considerable part -- of their economy on systems of small, flexible and specialised firms. However, the perception of this phenomena is somehow vague. It is well known that large corporation -- the so called national industrial champions -- traditionally exercise an important influence over the political system of countries and sometimes, together with large firms, they overshadow the 'unusual' dynamism and growth of local systems of small firms, despite the fact that the latter often have a comparable weight in terms of employment and total sales. Moreover, available national statistics tend to limit the lowest size of firms that are counted in inquiries to a level that is higher than the average size of firms in local productive systems, and in only few countries they supply data on input-output relations among production units that could disclose the

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in the international market -- and at the same time they seemed to provide decent labour standards compared to other forms of small firm organisation. This prospect motivated the Institute to form in 1987 a network group of pioneer researchers on the field (G. Becattini, S. Brusco, M. Piore, C. Sabel, C. Trigilia, etc.) to examine closely industrial districts in Italy and in a number of other countries. The work of this network resulted in two major conferences at the ILO in Geneva and in Sao Paolo and in two major publications (Pyke F., Becattini G., and Sengenberger W., 1990; Pyke F., and Sengenberger W., 1992).

8. Although the opinion of some researchers that in recent years have announced signs of decline in industrial district's performances, several indicators suggest that they generally have kept their promises. Comparative analyses show that in the last decade, districts have increased their weight on the national gross product, the national export, the national employment. Moreover, they attained higher average wages and a higher rate of participation for women. Anyway, independently from their future destiny, they have already witnessed the existence of paths of industrialisation that diverge from those that have been conceived in the past, and modified some of most traditional convictions around industrial development. The development seems to bear a cultural and institutional more ample variety than it was thought, and, besides, it can follow forms of industrial organisation that are more articulate than those of large productive complexes.

9. In Italy, industrial districts and more in general local productive systems of small firms account for the 14.4% of the national total employment and the 19% of the industrial employment (Sforzi, 1993).

existence of local dense inter-firms relationships[10]. As a consequence, it is difficult to measure in detail the economic and employment weight of local productive systems and a geographic map of them is needed. Up to now almost no policy-maker and researcher expected rapidly growing local systems to emerge where they did. "Many of the first researchers to notice these developments found the new factories almost literally before their front doors" -- as Sabel underlined.

The second reason is that these systems have peculiar needs in terms of industrial policy that particularly local governments (towns, counties, regions) should be well-placed to satisfy. Although local systems share some distinctive characteristics, they display a wide diversity in organisation and employment structure as well as in economic conduct and performance. They may have more or less co-operative business attitudes, a higher or lower proportion of subcontracting firms with respect to "final" firms, more or less "delocalisation" to other areas, more or less social mobility on the part of the workforce, more or less unionisation, etc. In part as a consequence, they may also differ in pricing behaviour, product strategy and advertising, investment and research and therefore intervene and react differently to increased international competition, the slower growth of world trade and the introduction of new technological trajectories. In other words, as for other forms of industrial organisation, there are both growing, stable and declining local systems of small firms. From this point of view, they share exactly the same destiny as other forms of industrial organisation (e.g., large multinational firms, trading companies, etc.). As with other forms of industrial organisation, local productive systems of small firms are not necessarily innovative flexible, consensual or successful.

10. The current categorisation of industry is not related to precise analysis of input/output relations. As such, it underestimates the importance of all types of industrial development poles. Italian researchers have underlined examples of complementary activities that are crucial for the functioning of a district but are counted separately: "within the tannery industrial districts (tanning accounting for 38.6% of all manufacturing employment in these districts) the footwear industry (being the second industry in terms of employment) employs 27.3%; within the textile industrial districts (textile employing 73.7% of all manufacturing employment in these districts) the clothing industry (being the second industry in terms of employment) employs 6.7%, while mechanical engineering (being the third) employs 5.4%, of which textile machinery employs 1.7%". (F. Sforzi).

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Box 1. **The Italian local productive systems of small firms**

In Italy, since the early 1970s, increasing attention has been given by researchers and, with a certain delay, by practitioners to a particular type of local development: small towns (from 15 000 to 100 000 people) where hundreds of specialised small firms belonging to the same industrial *'filiere'* are concentrated and a homogeneous community exists.

Well-known examples include Carpi (described above), Como which specialises in silk fabric, Prato in textile, Montegranaro in footwear, Sassuolo in ceramics, and Poggibonsi in furniture. These are examples of conception-intensive industries, but there are also similar local productive systems of small firms in such industries as micro-mechanics, electro-mechanics, and machine tools, in which Italy has attained a considerable international reputation. For example, this is the case for Cento, Copparo, Guastalla, Sant'Ilario D'Enza as well as for Modena, Reggio Emilia, and Bologna. Since the Second World War, these small towns have strongly developed employment and industrial production; they produce a large part of the Italian export volume, and some of them -- like Sassuolo and Castel Goffredo -- lead the world market.

These local productive systems are called "industrial districts" when they have the following characteristics:

Inside the limited geographic space -- the town or a group of closed small towns -- the economic relationships are particularly dense. (Thus, the socio-economic boundaries do not necessarily coincide with the administrative boundaries, a fact that can give rise to problems of coherence in the political action).

One specific industrial activity is largely prevalent in the local economy and the firms that are specialised in this activity are:

- mainly small, sometime medium-sized, never large,
- specialised in a small number of phases of the same process of production or *filiere*: the industrial *filiere* is somehow scattered on the territory and there is a strong division of labour among firms,
- sharing a mix of competitive as well as co-operative inter-firm relationships.

The homogeneous community shares a local culture that is the mix of:

- socio-cultural threats: sense of belonging to the local community, trust, work ethics, conventions that run both the social relations among individuals and the economic relations among firms,
- an "industrial atmosphere": the accumulation and diffusion in the local labour market of technical skills (including the ability to deal with international markets) and knowledge which supports the innovation processes.

A clear implication descends from the above characteristics, in particular the preponderance of industrial workers and small entrepreneurs: in industrial districts the social structure is weakly polarised. In Italy, 61 industrial districts have been identified. They are mainly concentrated in the Centre-North-East part of the country.

Box 2. **Types of firms in industrial districts: the example of Carpi**

The size of the firms

An industrial district generally has many micro-firms (firms with less than 10 employees) a large part of small firms (from 10 to 50 employees) and few medium-sized firms (from 50 to 200). The proportion of firms with different size varies in each district. It is related -- among other things -- to technology. In the footwear industry, districts have firms with an average size of 9 employees, while in ceramic tale the average size is 50. In the case of Carpi, a well-known knitwear and clothing district, 88 per cent (2 319 firms) have less than 10 employees, 11 per cent have between 10 and 50 employees and just 1 per cent has more than 50 employees.

The role of the firms

In Carpi there are at least three types of firms:

- final firms: firms that face the final market and sell mainly to wholesalers (44%), and retailers (38.5%). They purchase raw materials, control the work that is subcontracted, make styling and, often, make the sample preparation internally. They operate in different ways with respect to the market, and two particular cases can be identified:

  ⇨the pre-programmed sample firm: the final firm programmes 12 months before the season and organises the sale of its models;

  ⇨the just in time firm: the final firm produces within a month models at the request of wholesalers or importers who already know which models of other firms are selling well.

- subcontractors: these are firms that are specialised in only one or a few phases of the process of production: knitting, cutting, assembling, embroidering, ironing, finishing or packaging. They have an average size of 3 employees and different clients (only 14 per cent of subcontractors have just one client).

- complementary firms: firms resulting from backward and forward linkages of the predominant production process. Some examples are: firms that produce containers, or that print labels or insignias on containers, firms that produce machines to be used by the firms of the industry, firms who deliver the products, and so far.

Note that there is no close relations between the size and the role that firms play in the district. 'Final firms' can be micro-firms (74 per cent have less than 10 employees). Note, as well, that the Carpi district exports 74 per cent of its own production, thus even smaller firms use to export.

The relations among firms

- Concentration is weak. The 15 most important firms produce 30 per cent of the total production of the districts and employ 23 per cent of workers.

- Competition is certainly present. There is a market for almost each phase of the production process -- i.e., in each phase there are many producers but no one can control a significant part of the market. Cases where sub-contractors have only one customers are exceptional. There is little power concentration in the hands of individual clients.

- Co-operation is there as well. It involves some material relations (tools or row material loans, and alliances for answering immediate orders) and some immaterial relations (exchange of information and knowledge). In general, it means that firms accept a certain degree of obligation in respect of other firms. Richardson compares firms to dancers: in co-operation firms dance together but when the music stops they can change partner. An important condition to permit co-operation is the existence of a common language and a skilled labour force trained in the dominant industry of the district. In turn, the agglomeration in the district assures the circulation of information, the transfer and creation of competencies and, thus, a learning by living" is established (creation of an industrial atmosphere).

Source: "Il settore tessile abbigliamento - Un confronto tra sistemi produttive", Comune di Carpi, CCIAA di Modena, CEE-Comett 1991.

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The third reason is that local productive systems as such tend to be disregarded as targets of industrial and employment policy. While for other forms of industrial organisation -- and particularly for large firms -- appropriate, and often very expensive, measures of policy have already been designed and implemented, for local productive systems a coherent framework is still lacking. This point needs a more in-depth analysis and assessment, but in the meantime we will introduce the assumption that standard industrial policies choose individual firms -- considered to be almost autarchic -- or national industries as the unit of analysis and intervention, but not productive systems of firms. More recent horizontal industrial and labour policy directed towards "factors of production" -- for example, the diffusion of new technologies as well as efforts to improve the ability to monitor the markets -- do not usually define the specific industries and production processes that are targeted and as such they almost do not recognise industrial and local diversity.

Regional policies have similar problems, too. They tend to scale-down national approaches to administrative smaller spaces (regions, counties, or municipalities). These spaces are identified on the basis of a certain coherence with respect to political decision -- types of political actors, processes of implementation, level of autonomy in defining regulatory policies -- but not necessarily with respect to economic actors and structures, thus the regulatory space does not necessarily coincide with the industrial space[11]. Innovative experiences in the field of regional policy have had a limited impact. The seminal spatial-temporal approach based on development pole strategies, however, was able to emphasise the importance of inter-firm linkages at the local level. It was possible to visualise the industrialisation process in terms of an input-output matrix, most of whose cells would be empty to start with, but which would progressively fill up, thanks to linkage effects. However, this approach was essentially a top-down model of development oriented to large cities and large firms; moreover, it had already been forgotten when policy makers and practitioners started taking care of local productive systems of small firms. In short, industrial as well as regional policies take little or no account of the fact that in local productive systems it is not really the firm that competes on the global market, but the clusters of firms, as well as the socio-economic structure in which firms are embedded.

Note that the need for a tailor-made policy for local productive systems of small firms is independent of the consideration as to whether this form of industrial organisation is particularly better or worse than others. This need does not come from any kind of question about the future "regime of accumulation" that should replace Fordism in advanced capitalist societies. It results essentially from the relevance and specificity of existing cases, and from the hope of strengthening their competitiveness and ability to innovate as well as ensuring in for the future the local employment which already exists.

2.2 The limits of policy for small firms

At this point, the question emerges if the set of measures traditionally addressed to small firms should pay more careful attention to industrial diversity. In particular, which small firm models have been actually taken into account by policy-makers to define policy? Are they useful in the case of local productive systems or are they an obstacle to the perception of these phenomena and consequently to the formulation of appropriate policy?

Recent studies have begun to approach these questions after several years in which the principal academic interest was devoted to the conditions leading to the emergence of local productive systems of small firms and the terms on which different systems co-exist. Social scientists experienced in the field have started testing the results of their work not only in order to refine theories on economic development

11. Local productive systems of small firms range from single isolated localities with a precise administrative boundary to industrial quarters within a large town or areas including several municipalities.

and industrial organisation, but also to confront policy issues. They have criticised the limitations of the conventional conceptual framework within which small firms and local economies are understood and from which national policy is developed. There are three main limitations that have been underlined.

First of all, in the political agenda of governments and parties the standard category of small firm is often a black box that is full of heterogeneous economic activities mixed all together. Quantitative differences, in the size of the firms, have continued to be adopted as proxies for qualitative differences in the technology and methods firms use to produce goods, the workers' skills, the relations firms undertake with suppliers and competitors, and their position with respect of the final market. Little attention has been paid to the most advanced researches that have clearly stated that size of firms and productive methods are less dependent on each other than it was assumed in the past[12].

In the extreme cases, terms like "small firms" and "artisans" or "large firms" and "industry" continue to be considered as synonymous. Thus, traditional artisans that in a certain sense are the precursors of the industry, have been confused with small firms that on the contrary are the industry and share with large firms, for the same phase of the process of production, the same equipment and some basic engineering principles about design, production methods, material and machinery, that are far from being available to artisans.

Even sophisticated approaches used to perceive the total population of small firms as being composed of homogeneous "individuals", distinguished more on the basis of the ex-post description of their 'psychological attitudes and behaviour' than on the basis of some structural traits. Hence, "small firms taking the offensive" or "small firms being on the defensive", "small firms with a gregarious attitude" or "small firms that are dynamics", "insensitive" or "seduced" by "immateriality" (i.e., marketing studies, data banks information, R&D, etc.), "unsatisfied" by the use of information, or "disciples" of an intense use of information. On the contrary, little attention has been given to the difference between, for example, small firms that sell finished goods to the retail system, or between subcontractors that are dependent on the market and on the investment decisions of large firms, and small independent sub-contractors in industrial districts.

In the most diffused approaches, the standard category of 'small firm' sounds like a residual category that collects everything is not -- or, not yet -- a large firm. The role of policy in this scenario is to encourage firms to follow the sole available mode of growth and become 'mature' and resemble as much as possible the 'representative firm' of each industry, whose size is a constant. As a consequence, these approaches are not able to recognise the specific needs of small firms that belong to local productive systems and that share their inner externalities. These firms have a different and peculiar 'production function' (i.e., a different way of organising conception, execution, marketing and commercialisation of a specific finished product).

The second limitation affecting the conventional conceptual framework from which national policy is developed has to do with the often implicit hypothesis about small firm efficiency. In industrialised areas, traditional policy tends to represent small firms as uniformly ready to grow and thus

12. Among the first research on the subject is Brusco, 1975. The results of this research are producing slow changes in the language. So it may happen that, wanting to praise the efficiency and the innovative abilities of the firms of some industrial districts, a scholar can state: "even though remaining small, they have found ways for becoming large!" To avoid such paradoxes I use here "traditional artisans" to designate artisan and familiar activity in the ancient agricultural environment, and "small industrial firms" to designate both small subcontractors, small firms of industrial districts, and "future" large firms. For a more detailed description of different types of small firms, see S. Brusco and C. Sabel (1981), as well as P. Sylos Labini (1989).

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achieve efficiency. Policy makers therefore see their task as the removal of obstacles preventing them from doing so (through the provision of no-security loans, specific funds for small firms, technical assistance, and improved relations with public authorities). These obstacles are thought to be a result of both the control of large groups over the economy and their influence on economic policy, as well as the inefficiencies in public administration. Their removal is thought to create more medium size firms able to compete with large groups and counteract their monopolistic tendencies.

In underdeveloped areas, small firms are regarded as traditional businesses which are destined to remain small and, in consequence, either to collapse under the "heavy artillery" of low-cost, large-scale industrial production or to survive merely protected by the general backwardness. Here the task is seen as one of modernising the 'traditional sector' and of removing general obstacles to development, while taking care of reducing, in the course of time, the social costs of industrialisation.

In both cases, the assumption has been that -- apart from some exceptions such as catering to traditional, unusual, luxurious consumer tastes or time lags in large-scale business penetration of new markets -- small firms by themselves cannot be efficient. So, it is common to find official programmes founded on the paradox of a declaration of faith in the small firm but only on condition that it grows and ceases to be small.

Small independent subcontractors and firms in industrial districts are challenging the old contradiction of valuing something for what it is on the condition that it become something else. In many cases, subcontractors and firms in industrial districts can be efficient even without growing, and instead of being either the origin or the victim of large firms, they are rather their rivals or their partners. The key problem for small firms appears to be not their size, but their isolation.

The third limitation of conventional policy in dealing with local systems of small firms is its exclusive focus on individual firms. In so doing, policy makers overlook a crucial organisational and structural feature of these forms of industrial organisation: the relationships among specialised firms that co-operate with each other to produce the same final products, as well as the relationships among firms and local institutions that provide collective services and infrastructures. At least in these cases, firms are not isolated: they are bound up in relations of division of labour and specialisation, so that the fate of one particular firm is tied to events directly affecting other productive units. An example is given by the efforts firms undertake to introduce new methods of production. Developments such as Just in Time, zero quality defects, and single-minute change of die all require consultative and sustained co-ordination across all the operative units involved in the production of the finished product, i.e., between suppliers and clients, to prevent any kind of bottle-neck. A well intentioned parent small firm, pursuing product-led strategies with the help of public incentives, will soon cry in the wilderness if its subcontractors are reluctant to increase their organisational sophistication, too. A similar example has to do with the effort of subcontractors to increase their capacity to independently solve customers' problems. The efforts of the former would simply generate frustration unless an open relationship is developed with the latter and a common production "language" encouraged.

Inter-firm relationships are so important that they exist even in the case of local agglomerations of competing small firms. First of all, these small firms export and compete on the global market, where they share a small proportion of the total sales; thus there is often enough room for a game with a positive sum. Moreover, through business association, local banks, industrial foundations, firms explore opportunities for collective exports and they promote manufacturing centres to get and spread information that upgrade the quality of all the firms. Competition is still there, but instead of being wide spread on every single axis of the firm' activity it is focused on more innovative functions.

In short, all these limitations bear witness to the obstacles to the perception of change in the models of the small firm currently used by policy-makers. Social scientists' critiques of such limitations have correctly drawn the following conclusions:

- there are different types of small firms and they operate in significantly different contexts; consequently, policies should be adapted accordingly and doubts expressed about the use of aggregate approaches,

- much more emphasis should be given to the creation of an environment in which a small firm can combine its advantages of flexibility with the support and stability that comes from belonging to larger networks. Policy measures should, therefore, be adjusted to focus less on the individual competitiveness of firms and more on the permanent improvement in the quality of inter-firm relationships and community support structures.

3. LOCAL PRODUCTIVE SYSTEMS OF SMALL FIRMS AS A STRATEGY FOR LOCAL DEVELOPMENT

We have seen above that the need for a tailor-made policy for local productive systems of small firms is somehow independent of the consideration as to whether this form of industrial organisation is preferable to others. However, there are circumstances in which research does suggest. In a certain sense, a coherent and "preferable" model of local industrial and employment development. This is the case for numerous poor or restructuring towns, rural districts and regions where the local economy is based on simple agglomerations of small firms with low economic performance and working conditions, low levels of inter-firm relationships, and a certain difficulty in forging common interests among social groups. In these cases, local policy makers and practitioners are looking for measures to stimulate the transformation of groups of small firms into systems of small firms.

In this perspective, the question is the role that policy can play in stimulating the emergence of endogenous local development. Why has such a question appeared? Local actors are both pushed by the difficulties and poor results of traditional policies favouring geographic equilibrium, as well as pulled by the economic and employment performances of industrial districts they wish to emulate.

These cases are widely dispersed concern regions in developed countries, as well as in developing countries. Recently, a similar interest comes from regions in Eastern European countries where the creation of small firms has started either by carving small units out of large industrial complexes or by creating entirely new enterprises. In all these cases, the current thinking is that specific measures can help in transforming already existing agglomerations of small firms into systems of small firms.

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3.1 In developed countries: strategies based on monetary incentives for geographic re-equilibrium

In many local institutions, community leaders, regional and community officials are increasingly solicited "to do something" by bottom-up local demand and top-down so called "decentralisation" -- the institutional change that is supposed to increase local autonomy in policy matters[13]. Particularly when decentralisation is a quick change from a heritage of strong centralisation, community leaders, regional and community officials lack the valuable conceptual tools and devices necessary to do more than 'contact flying'. But even local policy-makers with experience of so called "geographic re-equilibrium" policies now feel that such a traditional approach is inadequate and have started looking around for suggestions concerning endogenous development. Let's try to explain why.

The geographic re-equilibrium approach arises from the conviction that the existing geographical distribution of labour, natural resources, and consumers as well as the existing distribution of industries and infrastructures determines the allocations of future plants across the economic landscape. New firms as well as existing branch plants choose their location on an evaluation of the costs of being distant from resources, suppliers, customers and infrastructures. It happens that the location actually chosen is often an area with an already established concentration of manufacturing plants. In fact, even when small regional differences in labour costs within industrialised countries do exist, they are not sufficient to entirely compensate for the costs of being distant from major industrial locations. As a result, production in many industries tends to become increasingly concentrated spatially. Now, the idea is that in order to remove constraints on locational behaviour and establish balanced growth, areas that are poor in resources and infrastructures, as well as less industrialised, can simultaneously counterbalance their disadvantages by means of national or regional monetary incentives (including lower taxes) that in each case are equal to the 'differential advantages' firms would enjoy in choosing the most industrialised regions. In this way potential entrepreneurs from poor regions will stay home and, above all, branch plants of existing firms will be attracted from outside.

Experience shows that a strategy to equalise conditions in every region presents at least two main problems. First of all, it is difficult to measure the appropriate amount of incentives, and usually this amount is underestimated. Several crucial comparative advantages and disadvantages are invisible for the traditional cost analysis and often they are overlooked. As we mentioned above, both the ability to innovate and the ability to respond quickly to changes in customer demand depend on proximity to experienced subcontractors and technological institution, availability of skilled labour, the ease with which transactions can be realised, the logistics of exchanges and stocks, etc. (see Section 1). These 'invisible factors' can be even more important for location than the factor costs related to distant resources: industrial history shows many cases of industry springing outside easy to reach centres. As a consequence, differential advantages of the most industrialised regions are substantially higher than was thought in the past and efforts to equalise conditions should have been much greater.

Secondly, the dynamics of comparative advantages are often misunderstood. Industrialised regions with a spatially concentrated and diverse set of firms and workers proceed most rapidly in improving productivity and the ability to innovate. They do not wait for second comers. Consequently, lagging regions may suffer from relative lack of external economies and fall farther and farther behind.

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13. Unfortunately, in some cases they are simply sceptical. Given the scarce resources and autonomy assigned by national governments, they are afraid that the declaration of faith in regional development merely constitutes an alibi for the disengagement of national governments from active policy aimed at sustaining aggregate demand. Or, they are afraid that the local perspective will turns out to be the simple expression of a traditional provincialism, strengthened by the feelings of insecurity, anxiety, and fear of loss of jobs and identity induced by rapid and powerful change.

The point is that the process of industrialisation may start in a place for historical reasons as well as by chance, but once it is established in that place there are increasing returns to be gained from concentrating the production of a good or service in that place. Thus, concentration tends to be self-sustaining and policies to reduce disparities must continuously and strenuously fight against industries increasingly trying to establish competitive advantages and territorial specialisation. As a consequence of this tendency, the amount of the incentive needed to make firms invest in regions without an industrial 'critical mass' of specialised activities must be higher than -- not equal to -- the 'differential advantages' found in industrialised regions. Moreover, this help needs to last for a long time.

In short, a coherent strategy based on monetary incentives designed to modify the existing industrial geography and reduce regional variations seems to require an extremely high and sustained total investment. Regions cannot maintain the required effort, so most of the time the outcome has been disappointing: an originally large but still insufficient total amount of funding scattered in many localities with the result that funds become too diluted to sustain a real industrial take off. Thus, if States and regions persist in the incentive policy, they inevitably have to scale-down their ambitions and modify the nature of the measures undertaken.

A priori, one way out for community leaders, regional and community officials is to concentrate the meagre funds they have at hand to target only specific kinds of activities, for example:

- rootless branch plants that are so vertically integrated and large that they can operate on their own; and

- firms that are so innovative that they require equipment produced on the spot and skills acquired only through practical experience and on-the-job-training.

Neither of these firms face locational constraints and both have substantial freedom to develop where they are or to locate where they please. Rather than the direct financial compensation of location disadvantages, the region's hope in this case is to attract a large firm that, once installed, can play the role of an indirect "detonator" of development, pushing the birth of new entrepreneurial initiatives, through what Hirschman has called "linkages"[14]. According to Hirschman, a given productive activity is able to activate forces, specific to that activity, that stimulate, or at the opposite depress, new investments. For example, an existing industrial operation that imports machines, components and processing from other regions and countries can exert special pressures on local firms producing subsidiary goods. When these stimuli are received, a linkage appears and it creates a sequence of development: an inducement mechanism mobilises those development resources and capabilities that are hidden, lost or badly employed. The reasonable assumption is that, before such linkages are made, even when competencies and the technology for a new activity are available in the local area, operators cannot identify new opportunities simply because they perceive their own interests only imperfectly or cloudily: they are conditioned in their decisions by a limited rationality, that is to say, by the absence of a clear and stable system of preferences, as well as an insufficient knowledge of the environment in which they operate. In such a world of confusion and contradiction, the large firm -- more or less consciously -- may identify new opportunities for investment or, more generally, may point out the development path to follow to the potential entrepreneur.

Now, local actors from less favoured regions could easily identify successful cases in which large firms have contributed to local self-sustained industrialisation. Sometimes they have even been at the

14. Of course, the creation of linkages that announce a future development is a necessary condition for this strategy. The simple movement of plants from one region to another is a zero-sum game unable to increase wealth.

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origin of some of the most dynamic local productive systems of small firms. For example, the well-known Emilian case shows that certain large and medium-sized mechanical and engineering firms (the Reggiane, the Ducati and the experimental centre of the Ducati, the Lombardini, the Sasib, etc.) have created linkages -- during the 1960s and the 1970s they de-centralised several phases of the process of production to smaller firms -- and greatly contributed to the diffusion of technical skills in the local area. In the long run, these firms have played the role of a sort of pedagogue: through their daily operational work, they have spread technical skills, industrial competencies, and "typical" principles of industrial production among hundreds of employees who, with different ability but with the same "idiom" and the same technical and organisational "grammar", can converse and co-operate among themselves on new bases[15]. Given certain conditions -- notably, a demand for decentralisation from large firms, short production runs, and more flexible and cheaper technology -- employees have become independent producers able to practice what they had previously learnt inside the factory. Briefly, many entrepreneurs have in their past a working or clerical career spent in large and medium-sized firms, or however entrepreneurs have been trained, "in the shadow" of large firms. They were: foreman that had learned how to monitor the productive process and to organise it, maintenance workers, clerical staff in charge of the relationships with suppliers and sub-contractors, or that knew the features of the market of the product, in addition to existing artisans who have been encouraged to become sub-contractors and modify their technology, their skills and the process to acquire them.

Community leaders, regional and community officials, aware of these and many other similar historical cases of successful industrial development, have been confronted with questions such as: Are "in-coming" large firms particularly able to replicate similar successful experiences? Are they always a rational target for a strategy based on linkages? According to concrete experience, the answer is generally no. The point is that large firms are not homogeneous, today as in the past, and they produce linkages with direction and intensity that are specific to their product, their technology, and their organisation. Thus, they can stimulate but they can also depress new investments[16].

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15. A well-rooted tradition in social sciences goes further in identifying a pedagogical role for large firms. In this approach the "discipline" a large firm introduces in a local backward community has not only to do with a set of technical and organisational principles, but also with a set of action-orienting principles. According to this approach, an in-depth social change is needed to bring industrialisation to a satisfactory conclusion. New attitudes, ways of thinking and systems of values have to be established so to favour personalities that are coherent with development. "Before" social relations were based on the sense of membership of a union of people living next to each other, living in the same territory, forming static community. Each individual conceived its own destiny as being tied to that of the community. He/she shared a spontaneous and global solidarity and he/she accepted pre-defined positions and roles. He/she almost did not imagine the possibility of a personal amelioration. Such an amelioration could be only collective because a new differentiation among the members of the community could have damaged a crucial public good, i.e., social cohesion. "Then", with the arrival of the large firm, social relations have been rather shaped by the participation of people in (or the exclusion from) the new industrial labour process. Individuals have redefined networks of solidarity with respect to labour and work career. They have oriented their action in respect of contractual type relationships, more oriented to individual interests. On the contrary the history of several industrial districts shows that the arrival or the growth of a large firm is not dramatically useful in the development of a district, and it can even be harmful. The values and the conventions that are needed are already sedimented in the local fabric and they are intimately related to the local community. The more the presence of a large firm is heavy and the more it gives birth to social polarisation among the local population, then the more it undermines the sense of membership to the community by means of producing a breach in the history, with consequences as much unexpected as disastrous.

16. The point has been clearly underlined by Hirschman.

In particular, there is an increasingly widespread conviction that very few rootless, vertically integrated brunch plants can actually induce further development within a reasonably short period of time. In many cases they are engaged in mass production, equipped with mono-scope machines and organised with semi-skilled workers; in extreme cases, the gain for the region is limited to a single assembly line[17]. In fact, large firms tend to develop new products and processes in their most sophisticated plants. As the design is refined and manufacturing methods routinised, they make it possible to move production to places with lower labour skills and costs. Under these circumstances, large firms do not create high and diffused competencies, do not integrate conception and execution in production, do not train problem-solver skilled workers, and thus barely incubate future entrepreneurs. Moreover, given the high level of vertical integration they have, and the fact they are usually managed elsewhere, they do not enter into autonomous relationships with suppliers and do not interact with the marketplace. Most of all, the future of this kind of firm or branch plant is not tied to the future development of the place in which they are located: as easily as they come, they can leave (even with some sunk costs).

Furthermore, there are few "nomadic" branch plants, either "good" or "bad"[18]. Thus, they can put regions in competition with each other before any decision regarding location is taken. As a result of such a tough and highly competitive game, the enterprises not only ask for monetary incentives and tax exemptions, they also expect such things as subsidised land, free utilities, and the like. At the end of the game, many regions are losers, but even winners, given their considerable investments and efforts, do not get as attractive a return as predicted.

Innovative firms in new or revived industries are more likely to produce positive linkages. They use rapidly changing product configurations and production technique and to do this effectively need to minimise the distance between conception and execution by means of learning processes, involving simultaneously engineers, technicians and skilled workers. Furthermore, they develop close relationships with local suppliers in order to experiment with quick tests, adaptations and transformations of standard machines, software, products and components. However, community leaders, regional and community officials in less developed areas who have tried to attract innovative firms such as these have had little success. Their difficulties stem mainly from problems in transferring highly skilled scientific and technical workers, who usually look for jobs within or near major metropolitan areas, and, above all, from the inability to forecast which firms have the potential for innovation. Local actors have tried to solve at least some of these problems both by multiplying the number of firms defined as innovative so as to increase the chances for positive results -- as well as for failures -- and by creating a high-level regional agency for economic development to support the region in promoting the territory and screening innovative ventures.

Let us summarise and draw two related conclusions. The strategy for establishing balanced opportunities for the location of enterprises by using monetary incentives to compensate for the disadvantages of less-favoured sites encounters important obstacles. First of all, on the demand-side, i.e., from the perspective of towns, rural districts and regions looking for in-coming firms. Given the amount of funds that national and local finance can provide for such a strategy, community leaders,

17. In many cases, including those quoted above, large firms that have played the role of "detonator" for local development had neither the structure, nor the nature of common rootless branch plants. They were rather equipped with multi-purpose machines, than with automatic mono-scope machines; they were rather producing locomotive, heavy wagons, sport cars, automatic packaging machines, motorcycles in small series, the first Italian models of radio and electric razors, than standardised goods; they were rather employing skilled workers, accustomed to perceive themselves as solvers of the customer problems.

18. In many countries a high percentage of employment is in single establishment family-owned firms that are often reluctant to change their regional economic base and tend to growth by expanding the existing plants. Moreover, many existing firms are lazier than one might think. They cannot easily abandon well-established local based routines, concerning for example the way in which logistics is organised.

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regional and community officials lack the resources for boosting more than a few modern projects at any given time, and therefore they can only correct imbalances in the long term, through a sequential process of attracting first one plant and then another. But even after the strategy is adapted in this way, and even if each step involves a maximisation of positive linkages, new obstacles are faced on the supply-side, i.e., from the point of view of firms and branch plants with both no severe location constraints. Few "nomadic" branch plants appear able to induce local economic development, while innovative firms are difficult to be identify in advance. Thus, at any given moment, these efforts can only impact on a few suitable activities. So, a second adaptation of the original strategy is needed: after an exhausting competition, only a few less-favoured regions, instead of all of them, are going to succeed in attracting the target industries.

An obvious conclusion has to do with the original strategy. After encountering a series of obstacles and undergoing small changes, the strategy has been substituted by or evolved into a different one. The initial objective -- a simultaneous re-balancing of all location advantages in the economic landscape -- has turned out to be a long-run strategy of sequential processes, with each step correcting the worst imbalance in order to approach a more balanced structure gradually. In other words, rather than scattering funds on many projects and localities at the same time, states choose a limited number of target cases, on the basis of qualitative criteria, and concentrate substantial assistance in these areas. The aid should focus on generating external economies of agglomeration and self-sustained growth as quickly as possible. Note that the long-term aim and effect are still the same: one of balancing and keeping in balance the structure of domestic productive capacities and outputs. What changes is rather the modus operandi of local and national institutions, in the sense that they now have to define criteria for the selection of priority areas.

The second conclusion has to do with the measures available to incite take off. Clearly, only a few local actors can rely on large plants and firms coming from other areas. Experience shows that a series of qualitative measures can be particularly helpful in these cases. They complement monetary incentives and range from specific institutions (research institutes, science and technology parks, development agencies) to traditional infrastructures (airports, highways and the like). Moreover, a long planning horizon, the channelling of resources to precise industrial specialisation, as well as location near a major metropolitan area are often quoted as key factors. In most other cases, however, local actors are induced to look for a more diverse development path based on existing and new local firms. Although several local initiatives have appeared over the last 15 years (schemes to encourage self employment and the creation of small firms, small firms consortia for mutual assistance and co-ordinated production, and so on.), there is little information about them and a coherent strategy to create institutional conditions favourable to economic development is still lacking.

Local actors are now looking for suggestions. They have often paid a particular attention to industrial districts as an appealing pattern of endogenous development, and, then, they have tried to analyse policy measures that have been introduced in those districts. Attention has often been particularly captured by the impressive performance of some industrial districts given the small size of plants involved and, consequently, the more limited resources demanded by local entrepreneurs for start up.

3.2 In developing countries: strategies based on large foreign industrial investments

Similar arguments appear in dealing with the experience of newly industrialised countries that have tried to attract foreign large plants. In these cases too, the original idea has been that industrial operation, relying initially on imports for equipment, machinery, and above all for many of its material inputs, would induce the domestic manufacture of these inputs and, eventually, a domestic capital goods industry. At the same time, state as well as regional policies could favour backward linkage investments

through the promise of tariff protection and credit allocations, particularly in periods of foreign exchange stringency.

Such a strategy -- following a sequential, staged path of import-substitution industrialisation -- sometimes suffered in the past from contradictory consequences: a large part of the newly emerging industrial establishment were likely to be a few large-scale, vertically integrated firms and groups, or firms with a preference for continued reliance on foreign suppliers of semi-processed and capital goods. These problems have sometimes become even more acute with the correction -- and sometime the complete reversal -- of the course of economic policy introduced with structural adjustment programmes[19].

Governments of the most industrialised countries are well aware of the complex problems that would arise following a rapid increase in imports from producers in low-cost labour economies. At least to limit domestic plant closures and large scale lay-offs of unskilled labour, they have developed a specific kind of relationship with third world countries -- 807 operations or Trafic de Perfectionnement Passif. It consists of shipping intermediate products to foreign locations to be assembled and returned to the original country. On re-entry, duty is charged only on the value added in the foreign territory. Developing countries themselves, confronted with structural adjustment programmes, have actively encouraged these practices. As soon as the programmes were applied, it was clear that many local manufacturers were not prepared for deregulation of imports: they faced increasing competition from imports and they lacked the export orientation and the technical and managerial skills necessary to undertake foreign contracts. In addition, they were subject to severe financial constraints and weakened by high interest rates. As a response, governments have developed incentives to attract foreign investments and promote contracts with foreign customers. For example, firms exporting their total production -- often located in so-called free zones -- have often been granted, for a certain period, duty-free status on items such as: building materials used in construction, extension, equipping or repair of premises; machinery involved in the manufacturing process; raw materials; import and export licensing. Moreover, these firms are exempted from payment of corporate taxes on profits.

At present, several large, foreign-owned manufacturing firms are operating in free zones. Other locally owned medium-sized firms produce and export on the basis of similar agreements. These two types of firms are mainly involved in sub-contracting work, based mainly around low wage levels. These activities can surely be important in terms of current macroeconomic targets, providing employment and earning foreign hard currency, and in some cases they are the principal reason for the growth of industrial exports. But these firms are only indirectly connected with the final markets, they induce almost no linkage effect, and they are dependent on the design, marketing and investment decision of their foreign owners-clients.

Today, local leaders are interested in developing an independent marketing and design capability for firms without foreign ties: that is, locally owned firms producing a wide range of products (clothing and knitwear, furniture, mechanics, etc.) for domestic markets. These are mainly small and medium-sized firms[20] that are only partially able to take advantage of 'classical' international technical assistance —

19. Programmes intended to transform the domestic manufacturing sector into an export oriented sector by means of increased competition into the domestic market (deregulation of imports) and increased price advantages to stimulate export (devaluation of the national currency).

20. In order to complete this list, it must be noticed that an important part of the domestic demand is often still supplied by traditional artisans and home production. It could seem that certain elements of design capability exist amongst these producers. But, the design of their products can satisfy functional aspects, in terms of durability and comfort, and it can satisfy certain aesthetics features but it is not industrial "design". Traditional artisans are not able to deal with the manufacturability or suitability for "industrial" production of their products. Industrial design requires a set of skills that a traditional artisan does not

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principally because of its continuing orientation towards large-scale operations. There is an increasingly widespread belief among local leaders that these firms might be able to benefit from developing flexible specialisation methods of production and network relations. Or at least there is the conviction that local firms that seek to export or to defend themselves against imports must develop strategies that take into account product-led competition. In other words, the debate on industrial and employment development has moved, at least in part, from the problems of markets (import substitution versus export promotion, forms of regulation of the internal markets, distortions in price structures, etc.) and supply of given factors of production (a right amount of capital for fixed investments, machinery from abroad, modern management of large plants) to strategies of production in development policy (techniques, firm sizes, inter-firm relations), appropriate types of technical assistance, as well as the creation of appropriate institutions to spread information about technology and markets in the local business community.

An important spotlight is often focused on the question of forms of production organisation: specifically, how small firms can be most effectively structured; how they should relate to suppliers, clients and direct competitors; how they can be sustained by institutions that implement industrial and employment policies. In many cases, it has been noticed that certain domestic elements of design capability do exist as a result of formal and informal training. In addition, certain elements of flexibility exist as a result of the size of firms and the kind of products that they make. Conception can often rely on an important symbolic system that is expressive of the complex local culture, and it is able to incorporate a highly developed taste for particular colours and aesthetic features of products[21]. On the other hand, the more functional requirements for products such as clothing are relatively easy to learn. Moreover, some entrepreneurs have experience with formal training courses abroad. Finally, the central role of imitation in industries like clothing where conception and drawings are not necessarily subject to strong technical requirements should be stressed[22]. Yet the problem remains that indigenous design capability must be nurtured by the adoption of modern production procedures, without which small firms can face organisational obstacles to fulfilling orders. Design detached from industrial methods is not sustainable: it cannot be efficiently implemented without manufacturing plants organised according to the engineering principles of specialisation, flow and flexibility. At the moment, most small industrial firms are organised like expanded traditional artisan workshops[23]. They suffer a relative lack of synchronisation of component

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have. Efficient manufacturing is guided by aspects concerning engineering principles on relations amongst product design, production method, material and machine -- as well as business strategy and organisation. On the contrary, a traditional artisan acquires design skills -- to conceive, produce and modify a given traditional or industrial product -- through apprenticeship with an established artisan or by attending a course. There is little formal schooling in the theoretical and technical fundamentals of the production process. Moreover, with few exceptions, their products are usually made on the basis of a locally established or copied style “requested by the customers”. As a consequence of the incapacity of distinguish their products, traditional artisans have limits in price setting power and are strongly exposed to the future competition of internal and foreign manufacturers.

21. It must be borne in mind, however, that design often involves information on fashion trends and preferences that are uncommon in these countries. Small firms tend to collect sales records on their own production, as well as fabric types and colour records, sometimes photos. They help to keeping the designer aware of the firm's history, and eventually help develop a certain coherence in styles. But they say nothing about international style trends -- this information usually comes later, through magazines and television.

22. It is well known that everywhere -- in developed as well as developing countries -- ideas are widely borrowed by stylists, and the existence of a specific "learning by copying" as well as adaptation and small changes that come with the so called "copying process" help in refining production skills.

23. Work uniforms offer an interesting example, because although usually considered a volume product, they are often produced with artisan principles. The small industrial firms collect the individual measures of -- let's say -- every single hotel or bank employee, receive the fabric that is screened, chosen and bought by

production that represents for them an obstacle to increasing their rate of throughput and, at least in part, an obstacle to attaining requisite quality standards. In those phases of production where a machine would be useful, not only to increase output but also quality, these small firms are often weak.

A second weakness of the small firm that is frequently underlined concerns specialisation and co-operation: small firms manufacture a wide range of products and execute all the tasks necessary to their production. Yet, they are not specialised in horizontal terms: products are not targeted for specific customers in order to reach market niches. Usually, such a situation makes establishing a market strategy and controlling the synchronisation of component production difficult and inefficient. Moreover, the production process often has elements that confound good sense; for example, a small number of products are often generate most of the annual sales value and, conversely, less crucial products are responsible for high consumption of plant resources. In this way, problems of flow (long cycle times, work in progress inventories, low productivity of è working capital, and so on) can be fostered by a wider product mix. On the other hand, firms are not specialised in vertical terms. The level of vertical integration in the process of production is, on the contrary, particularly high. Such traditional inputs as raw materials, accessories, and packaging materials are bought from outside, but all other phases of production take place inside the firm. The entrepreneur also commonly acts as his own sales representative and is in charge of delivering products. Firms need a wide range of competencies and equipment that are difficult to handle efficiently, particularly in a small firm.

This lack of specialisation is obviously related to deficiencies in terms of industrial methods. By trying to produce a wide range of products in the same plant, small firms increase the scope for organisational inefficiency. Furthermore, firms do not develop a distinctive core of skills and tend to buy the same range of machines, both of which lead to reduced quality standards and competitiveness problems. Finally, the lack of co-ordination and co-operation that results from this system means that spontaneous adjustment to "rare" market opportunities does not result in specialisation and co-ordination but in domestic imitation.

In order to deal with these kinds of problems, local leaders in both developed and developing countries have started looking around for ideas for appropriate industrial and employment policy measures focused mainly on small firms.

4. EXISTING POLICY DEALING WITH LOCAL PRODUCTIVE SYSTEMS OF SMALL FIRMS

Given the limitations of these tools, how is it possible to suggest ways to accommodate convincingly a coherent framework for appropriate measures of regional and local policy? How is it possible to reduce the delay in formulating policy relating to existing or "desired" local productive systems of small firms?

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the direction of the hotel or the bank, produce the uniform on the individual measures -- with an organisation of work including, at least in part, “free-hand cutting” and “handfitting assembly” -- and discuss the final adaptations with every unsatisfied hotel and bank employee. Apart from quantitative consideration, there are two crucial difference from a dressmaking kind of production: the use of some semi-specialised machines and the fact that the conception of the products, the style, and the drawings are almost entirely assigned to the firm, which has to present a limited number of alternatives to be chosen by the board of directors of the bank or the direction of the hotel. On the contrary, dressmakers use very simple tools, limited to a sewing machine, scissors, thimbles, etc. -- the same implements as a pre-industrial family production -- that are multipurpose; and they have to listen to the requests of customers from the very moment that they arrive carrying the material -- bought in specialised retail stores or during trips abroad -- along with the magazines that inspired the design.

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In areas with a high concentration of small/medium sized firm's variety of different policy approaches has already been tried. In many cases, the choice of policy measures has been similar and rather traditional: financial incentives of every kind for all industrial enterprises and a priority focus on smaller firms. These funds -- no-security loans, low-interest credits for investments, easy-term credits for working capital -- are no different from the SME support programmes provided at the national level, except for the fact that they are not usually limited to small enterprises and can involve larger funding amounts. In other cases, there has been a more innovative effort. Local institutions as well as autonomous quasi-public agencies have been created to formulate effective policy tailored to local needs. One such example consists of making industrial parks and sheds available at low cost to small firms. Another attempts to create loan consortia so as to improve small firm access to financing. Of particular interest is the creation of public and private centres or network hubs which offer "real services" to small firms.

There are some valuable experiments to be analysed. Given the immensity of this field of enquiry, our analysis concentrates on three cases:

- the case of "*centri di servizi reali*" developed in Emilia-Romagna (Italy) by ERVET, the agency for regional economic development,

- the experience of the Danish Ministry of Industry which in 1989 launched the Danish Network Programme -- the first national, top-down initiative designed to offer "challenge grants" to new networks[24] and to train "network brokers",

- the case of local technology institutes supplying services to small firms in food processing and packaging, wood and furniture, footwear, toys, textiles, etc., in the Valencia Region (Spain). These agencies were set up by IMPIVA, the institute of small and medium-sized enterprises.

Although these experiments are interesting in many respects, attention will be focused less on the particular measures adopted than on the background and the general approach from which those measures derive. Above all, an attempt will be made to pinpoint the specific historic outlook and the strategic options that have prompted support for small firms. In these circumstances, the results lead to the crystallisation of two different approaches. Although elements of both approaches are visible in each of the examples, the definition of two separable policy outlooks will make the policy discussion more precise. For similar reasons, the order in which the approaches are presented is analytical more than historical.

4.1 The Danish case

In 1989 the Ministry of Industry of Denmark launched the Danish Co-operative Network Programme. This was a three-year programme founded with 150 million kroner to encourage "network co-operation" among firms.

4.1.1 The problem

The proportion of the industrial work force employed in small and medium-sized firms is greater in Denmark than in any other European nation. With the prospect of a more open European market, this large small firm industrial sector has often been seen as a problem. Small firms, previously relatively

24. Industrial networks are economic units that share a frequent interaction; these interactions can be co-operative in cases where non-market interfirm co-operative initiatives are involved.

protected in local markets, were thought to be threatened by 'external' competition. It was not clear how such local manufacturing fabrics could survive, let alone continue to assure high wage levels.

Let us take a large foreign firm with an international extended market and a small local firm that sells on the relatively narrow national market. Then, let us assume that they produce the same product with the same level of vertical integration (i.e., the same type of operations performed inside the firm). The idea is that, if tomorrow the large and the small firms have to compete on the same more extended market, the former has an advantage because of its higher and increasing level of specialisation of resources[25]. The arguments which support this idea are well known: the large firm produces a large number of products and as such it is supposed to have an advanced internal division of labour. In turn, this division of labour has increased the ability of workers by focusing them on limited tasks (those tasks in which each worker has comparative advantages), saved the time workers would lose in changing tasks, permitted a better exploitation of plant capacity, allowed the use of the most sophisticated techniques. In short, the division of labour has increased the productivity and then the competitiveness of the large firm. Nothing similar has been within easy reach for the small firm, which cannot count on sizeable demand for its products and, as a consequence, is unable to undertake long-term investment strategies in innovative technologies or specialising skills among workers[26].

Moreover, a virtuous circle of growth based on an internal process of division of labour is available for the large firm, while this is more difficult for the small one. As soon as customs barriers are removed, the large, more competitive firm is going to gain new demand. This will encourage the further expansion of its production to take advantage of a more productive division of labour. An increased division of labour will increase specialisation of resources and decrease unit production costs[27]. As a consequence, the large firm will further enhance its competitiveness and gain new market shares. Once established, this process could even take the large firm to cover completely the demand for a single product.

In this analysis there are few possibilities for a small firm to prevent -- or even delay -- a complete absorption. It could rely on antitrust regulation, or on the existence of organisational limits to growth of the large firm[28]. It could also survive due to the existence of unstable and uncertain portions of market demand. In fact, if progress in division of labour depends on investments in product-specific equipment and organisation, and if managers of the large firm can distinguish stable and unstable portions of demand, they must keep step with the changes in the stable component to ensure that expensive machinery and workers[29] with narrowly defined skills are always sufficiently employed. So, they simply leave space for the smaller manufacturer to supply customers in the volatile component of the market[30].

25. Specialised equipment and workers.

26. Given that resources are specialised and they cannot be used for alternative tasks, a firm invests only if it is sure about the full employment of the new resources.

27. The Large firm is facing a decreasing curve of long and medium-run costs: the higher its production, the lower is the cost for unity of product.

28. Such as bureaucratic costs that increase quickly with the size of the firm, the difficulties to extend teamwork, etc.

29. The difference with respect to the standard hypothesis is that here labour is considered a fixed factor and decentralisation of production is the effort to transform labour into a variable factor.

30. The branch of the industry could be divided into two parts: the large firm, which corresponds to the *core*, employing the most advanced division of labour to satisfy the stable component of demand, and the small firm, the *periphery*, using less refined and less specific techniques to satisfy the unstable component of demand.

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However, even if the small firm escapes a slow death, it is anyhow limited by its size to pursue short-term investment strategies with technologies discarded by the larger firm. In other words, it is obliged to occupy the lowest position of a technological dualism, and it is condemned to spend its future subsisting in the shadow of foreign technologically advanced large firms that want to eliminate uncertainty from its long-term investments.

4.1.2 The solution: an extensive division of labour among firms

According to this scenario and given the above-mentioned assumption, the analysis does not suggest any appealing solution to avoid the competitive threat that a more open market can pose to a regional industrial structure based on small firms. The only hope may come from actions able to modify the crucial assumptions: the homogeneity of the product among small and large firms, as well as the homogeneity of their level of vertical integration. In order to preserve their efficiency and autonomy, small firms must undertake a structural transformation: they should change their product, or their level of vertical integration, or both. In other words, there is a sort of non-exclusive alternative. Either small plants could escape the competition with large firms by means of restructuring and specialising their activity in the production of goods for which substantial, stable demand never exists[31], goods that are manufactured by skilled workers using general-purpose tools and methods that often approximate artisan techniques. Or small firms could face the competition of large firms producing the same goods by means of division of labour amongst themselves, in order to specialise each firm in only a few phases of the production process, and reach a level of competitiveness that is comparable to that of large firms. In short, local firms should move from being smaller than large foreign firms to becoming simply different from them.

The Danish programme is inspired by both alternatives, but its main focus is on the second one: encouraging the creation of networks of small firms that could "compete successfully with the best of large companies"[32]. The crucial idea is that -- given the existing domestic industrial structure -- the strategic unit that can compete with the large firm is not a vertically integrated small firm, but a network of firms that link complementary skills to produce the same quantity of product as a large firm, and so attain similar levels of specialisation and efficiency.

Because of its size, a small firm is not able to reach the optimum efficient scale in every single phase of the process of conception, production, marketing and commercialisation of a good. For example, it cannot spread the costs of overhead functions such as marketing and research and development over large quantities of finished goods. Consequently it is obliged either to raise costs, making itself non competitive, or it must avoid whole important areas of business. But, instead of making everything internally, a small firm could specialise in one product and in one or a few phases of the process of production, and buy in specialist processes or services that require a scale considerably greater than it can achieve on its own. So, if every small firm sharpens its business focus, and establishes backward and forward linkages with other specialist producers, it can increase the quantity it produces, it can reach an efficient scale in its one core competence, and it can be efficient even without increasing its own size.

Of course there are three necessary conditions for the success of an extensive division of labour among firms. The first one is that the most advanced production process in a given industry must be decomposable into phases, and each of these phases needs a minimum efficient scale that is small enough

31. It is often the case for fashionable garments, high quality ice-cream and pastries, machine tools, and so on.

32. See NIELSEN, N.C. (1993), "Network Co-operation -- Achieving SME Competitiveness in a Global Economy", oral presentation given at the Fourth Annual EIC Conference, Helsingor, 3-5 June 1993.

to be operated efficiently by a small specialised firm. This is usually the case for light industries (clothing, footwear, furniture, toys, musical instruments, etc.), but it is also true for more complex production such as machine tools, mechanical and electro-mechanical components[33], ceramic tiles, etc. Thus, in many cases the condition can be satisfied.

The second condition is that there are weak economies of vertical integration among different phases of the process of production. In other words, the phase A and the phase B can be integrated in the same factory or they can be executed under two different "roofs" without significant cost differences. This second condition is often satisfied, too. Economies of vertical integration which derives from technical factors are rare[34]. Economies that arise from transport costs can be more important, but they depend on the relative costs of transporting raw materials, components, and final products[35] and on the original location of all inputs, plants, consumers. So, there is no solid evidence of a systematic pressure for vertical integration caused by transport costs. Moreover, different firms of the same production stream can be as geographically close as different production units of a vertically integrated plant, and a network of small firms can resemble an "open air" factory[36].

The third condition is that transaction costs must be low. In other words, economic actors must be capable of regulating exchange relations in an efficient and economic manner. It is well known that in an opportunistic world, the choice between doing an activity inside or buying its product from outside is based on the nature of the related transactions. If these transactions are uncertain, frequent, or they imply "asset specificity", entrepreneurs prefer to make that activity inside[37]. In fact, in all these cases, costs of quality and delay control, costs of using the market, and costs of preparing contracts tend to be higher than equivalent bureaucratic costs of co-ordination inside a large plant. In order to remove this constraint to an extended division of labour among firms a specific role for policy is required.

4.1.3 The strategy

How is it possible to transform vertically integrated small firms into networks of specialised firms that instead of competing in isolation, compete in co-operation? How is it possible to develop a customer and supplier base that can request and deliver parts and components in the volume, to the standards and with the delivery times that are required to produce and sell without bottle-necks?

The programme has both ambitious perspectives and reasonable targets. On the one hand, it brings to mind the ideal of a purposefully crafted interconnected industrial fabric, the result of a global

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33. Many operations such as grinding, drilling and lathing can be efficiently executed by only a few operators or even a single operator.

34. The classic case is the one of iron, coming from the blast-furnace, that does not have to be heated before going into the mill if both operations are carried out in the same plant.

35. In some cases, raw materials can be more easily transported than components, components more than final products, and vice-versa.

36. The clearest examples are industrial and artisan parks in which small firms are agglomerated. Firms that are located in these parks and share industrial exchanges have practically the same transport costs as a large plant that needs to move intermediate products and components from one shop to another.

37. In fact, the more uncertain the transactions, the more detailed the contracts must be, which means that they are difficult to write and expensive; the more frequent the relations, the more investments for a related plant are justified; the more relations among firms demand "dedicated investments," the more any one party can hold up the others.

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national drafted plan of industrial restructuring. On the other hand, it actually implements its own process by more modest -- given the resources at hand -- and practical means: encouraging those cases of complementary activities among firms that are almost 'ready' to create a network. Firms that perceive the existence of advantages in sharing the fixed costs for one sales or buying department, those that could be easily made aware of the gain in combining their productive capacity, and firms that could share the expensive costs of expert consultancy work or training are encouraged by the state to do so. Some of them -- several hundred -- will be stimulated by direct public help; others -- some thousands of firms which constitute the entire final object of the policy -- should be encouraged by successful examples in undertaking similar experiences. In the long run, and given some spin-off effects, the hope is that a successful inter-firm collaborative strategy would achieve not only limited changes in relations among firms but more general transformations involving the perception that firms have with respect to growth and ways of organising production.

What kind of direct public help should be promoted? As we have stated above, the answer has to do with efforts to manage high transaction costs. The crucial hypothesis is that spontaneous self-organisation of co-operative relations is unusual, because somehow economic actors go too far in their individualistic ethos. This could be either the result of a fiercely competitive mentality, sometimes reinforced by an exclusive focus on the domestic market and a misunderstood anti-trust legislation, or the simple effect of bad past experiences. But the consequence is the same: small entrepreneurs perceive themselves as being embedded in a rudely opportunistic environment and, consequently, they limit the choice about their firms' structure to the traditional alternative 'market versus hierarchy' -- i.e., the 'invisible hand' of autonomous contracting in the market versus the 'visible hand' of the informal or formal-bureaucratic governance that comes with vertical integration. The point is that where this strong individualistic ethos prevails, inter-firm co-operation is often disregarded even when some clearly identifiable economies of scale are possible that could increase both individual firm and collective local competitiveness. Thus, in such an environment, either the state attempts to alter the definition of distinct interests in civil society -- for example by encouraging the creation of trust relations -- or it encourages some sort of quasi-vertical integration to manage mutual doubts about the other's reliability. The second alternative is the one that has been chosen, and the creation of formal networks has been chosen as the most appropriate tool.

Box 3. **The Network programme**

The functioning of the programme is based on two main points.

a) Incentive scheme

On the one hand, the are monetary incentives to promote co-operation among firms. Groups of at least three independent firms that would like to commit themselves contractually to a long-term relationship to establish, use and develop some joint functions[38], can apply for grants that co-fund the creation of the network. Grants are delivered in three different forms that are related to three different phases in the creation of a network.

- feasibility study grants. Up to 75 000 kroner are proposed to evaluate the potential of a co-operation in a future possible network, before firms involve themselves financially,
- planning grants. Up to 50 per cent of the costs (the average actually given was 87 000 kroner) to prepare the detailed network action plan, operational budget and structure, that are needed to decide to establish a network, are supplied,

38. Which they own jointly or on whose operation and development they have a decisive influence.

- starting up grants. Up to 50 per cent of the operational costs in the first year of the network, and up to 30 per cent of these costs in the second year of the network may be given by the government (the average actually given was around 1 320 000 kroner).

The Mechanism is the following one: if the feasibility study justifies the creation of the network, the firms can go a step further and apply for planning grants. In turn, if the results of phase two are positive and firms do decide to establish a network, they can get a two years starting-up grant. Finally, after the first two years of life -- i.e., at a relatively early moment of time -- the firms themselves are supposed to take over the financing of the operations and development of the network. In the whole process, a maximum amount of 5 million kroner can be granted per network.

b) Awareness campaign and brokers

On the other hand, to take horses (the firms) to the water (the grants), co-operation among firms is promoted throw an information and awareness campaign and, above all, a training programme for 40, so-called, *network brokers*.

Brokers are advisers from banks, lawyers, accountants, trade associations, private consultants. They are trained in 6 months, during which they attend 7 seminars of 2 days each (the broker has to pay a fee of 35 000 kroner). They are supposed to identify and to point out co-operation opportunities, to suggest ways in which firms could link their complementary skills, to create contacts among potential partner firms, to motivate the firms to co-operate and to mediate through critical phases in the process of establishing a network.

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The policy of network creation involves several measures ranging from challenge grants that provide incentives to spur networks to vigorous marketing campaigns. Establishing conditions for information perfectness is a prerequisite to winning the support of the business community. This is initially assured by means of deliberately constructed, formal arrangements -- i.e., creation of a formal network. Given both the suspicion of asymmetry in information and the fact that present costs should be distributed on the basis of each individual's future gains, every potential partner in a network is supposed to solicit detailed measures about its own as well as other partners' possible advantages. Thus, in order to assure information transparency, successful conflict resolution, and continuity in planning network activities, some kind of external catalyst or broker is needed. Such a role can be played by different actors, according to local circumstance and existing institutions. The Denmark strategy has been focused on the creation of a new class of professional brokers, trained through a scheduled programme. At present, advisers from banks, lawyers, accountants, and private consultants are most in tune with the market-oriented perspective of the network idea -- they clearly also have a personal financial interest in the success of the networks.

4.1.4 International links of the Network programme

The Network programme has two interesting linkages with policy that are or have been developed in other countries. Firstly, it has often been considered the first national attempt to reproduce the success of flexible manufacturing in Third Italy, while adapting it to different circumstances -- i.e., lower associative behaviour and inter-firm-collaboration. In reality, the first accounts of Italian local productive systems of small firms reached the United States where since the beginning of the 1980s important autonomous experiments have been developed and a long- standing debate on flexible and specialised productive systems has improved the subject's intellectual and analytical foundations[39]. It was only later on that these accounts made an impression on the Danish government, which after investigating the process in some depth made the decision to go all out. The Government involved the Danish Technological Institute (DTI), a large and heavily centralised private institution, in the conception of the project. DTI was facing a decreasing demand for advanced technological services and thought that encouraging small firms to co-operate could increase their buying capacity[40]. The programme was carried out by the National Agency for Industry and Trade, while the DTI was in charge of the training of network brokers. Today, DTI has found both new domestic and international demands. In particular, it collaborates with some foreign national or regional agencies that want to train brokers either to integrate public policy or use a similar networking strategy to stimulate modernisation.

An important example is found in Portugal where, as in Denmark, the hope was to modernise the domestic small-firm economy quickly enough to compete in the "consolidated" economy of Europe. Policy-makers have been attracted by hypothesis in which small and medium sized firms would continue to play an important role. Since 1988, within the scope of PEDIP, a five-year Community programme of support to industry, an attempt was made to carry out actions encouraging co-operation among small firms. More recently, in 1990, the Ministry of Industry and Energy promoted through PEDIP a specific action (15 million ECU for 2 years) for the development of Co-operation Networks. At the and of 1991, brokers were recruited and an advertising campaign undertaken.

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39. See, as an important example, the review *Firm Connections* published by Regional Technology Strategies, Inc.

40. See PYKE F. (1992), "A focus on the Danish Technological Institute and the Danish Network Co-operation Programme," paper presented at the international conference, "Endogenous Regional Development in a Global Economy", Valencia.

There are other examples in the United States and Canada where state governments and many private institutions have produced network approaches that have tried to adopt principles and tactics developed in Denmark. In England, the Avon Training and Enterprise Council in Bristol have created Network Centres and one of the elements of this strategy involves the training of brokers in collaboration with the Business Net Ltd., a UK subsidiary of the DTI. In short, one could reasonably argue that the demand for policy for local productive systems of small firms is so strong that is not only asking for regional co-operation to replicate successful experiments elsewhere, but it is even creating a market for a new international service sector.

The second linkage has to do with the network programme innovativeness. In spite of its many valuable insights and its international reputation, the model is not completely new. It has been underlined on many occasions that this relatively recent state-sponsored programme has been only loosely inspired by the Emilia-Romagna experience. The policy that has been implemented in Denmark is different from the famous strategy based on the creation of centres for 'real services'. In reality, the specific type of network promotion that has been experimented with in Denmark brings to mind two other traits of the Italian experience: the help for so-called 'consortia' and the role played by the trade association for small firms. In Italy, consortia have a structure that is fixed by law. They are non-profit-seeking associations of enterprises which must be registered. Their aims vary from buying raw materials to common market activities. The most usual forms are the loan assessment and guarantee consortia and the export promotion consortia[41]. In the last 20 years some national laws have sustained consortia by means of tax reductions, subventions and low-interest credit[42], and today several thousand of them exist in Italy.

National efforts, however, only partly explain the wide diffusion of these organisations which is also due in large measure to the active participation of trade associations. *Mutatis mutandis*, in regions such as Emilia-Romagna trade association have often played the role that in Denmark has been assigned to brokers. Their extraordinary ability to act as catalyst[43] is not only based on the large number of practitioners dealing every day with the problems of member firms; it also relies on a well-established reputation earned through long experience in providing a wide range of services to small firms. They began by offering services relating to matters such as book- keeping and the preparation of pay packets, then broadened their field to include areas such as the calculation and payment of indirect taxes, income tax declarations, and insurance contributions. As a result of the popularity of the services provided to their members, trade associations have attained levels of expertise that often outstrip those of private consultants, and yet prices have often remained lower. Recently, these organisations have branched out still further: they now promote professional training courses, establish associations for the purchase of raw materials, help companies take part in trade fairs and exhibitions, maintain contact with governmental bodies that promote trade, co-ordinate the demand for credit with banks to secure low-interest loans. In short, services have been the "Trojan Horse" by which trade associations have created their solid reputation in the eyes of small businesses.

Some figures may help to give an idea of the importance that these organisations have assumed in certain areas. In the province of Bologna, which has a size and a number of inhabitants comparable with a County and approximately 27 000 small firms of less than 20 employees, one of these organisations, the CNA, has about 17 000 member firms, 41 local offices, and 500 employees. In Bologna, CNA prepares 22 000 pay packets each month for some 5 000 firms, keeps the books of 10 000 firms, prepares the

41. There are 350 export promotion consortia grouping together some 7 000 firms.

42. L.675/1977; L.83/1989; L.317/1991, etc.

43. The brokerage role can be played equally well by employees of state agencies, or by the service centres that act to bring firms into collaborative relationships, sometimes with the help of universities.

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income tax declaration for almost all its members, and organises some 80 training courses a year on subjects ranging from management and business administration to informatics and foreign languages.

CNA and other trade associations also identify co-operation opportunities, suggest ways in which firms can link their complementary skills, create contacts among potential partner firms, motivate the firms to co-operate and mediate critical phases in the process of establishing a network. This has happened for informal as well as formal networks.

Formal Consortia in Emilia-Romagna-1991.Formal Consortia in Emilia-Romagna-1991.Formal Consortia in Emilia-Romagna-1991.Formal Consortia in Emilia-Romagna-1991.Formal Consortia in Emilia-Romagna-1991.Formal Consortia in Emilia-Romagna-1991.

Provinces	Bolog	Mode	Reg-E	Parma	Piacen	Raven	Forli	Ferrar	Tot.
Type of consortia									
Production, Selling and Buying	44	91	29	34	17	40	49	45	347
Loan Guarantee	4	3	1	1	3	1	7	5	25

Source: CCIAA-Artigianfidi.

In the 1950's, the CAN in Bologna promoted a large assessment and guarantee consortia which today has 7 500 member firms and guarantees some $12 million in loans. It has promoted 41 consortia for production, common buying and selling that today have 8 000 member firms, and 42 industrial parks with a total surface area of 3.6 million in which 1 030 small firms are located.

As a conclusion, it is clear that all the above-mentioned activities do more than simply stimulate networks. The trade association is directly involved in providing services. Instead of reducing the expense of keeping accounts and preparing pay packets by asking financial assistance from the national or regional governments, the organisations themselves have set up offices to perform these functions at a lower cost. The associations may follow this line in order to swell their membership but, in any case, the result is that the entire local fabric is provided with skills that would otherwise not be available or which would be much more costly. This suggests two things in particular. On the one hand, the nature of these associations is gradually moving from lobbying and network stimulation to the provision, first, of "common or garden" services -- book keeping, for instance -- and then towards riskier areas of activity, for which they need to acquire expertise that is rare on the local market. On the other hand, it points out the crucial problem of the provision of services for local productive systems of small firms.

Box 4. **Inter-firms Co-operation: the example of Carpi**

In Carpi, many of these forms concern stable informal relations in a common project involving the exchange of skills amongst firms, subcontractors and retailers -- research on a new style, use of new materials, new processes, systems for total quality; testing of new commercial strategies; renting of under -- exploited machines; small innovations on and adaptation of existing technologies, and so on.

Other forms concern joint ventures in which firms interested in projects with technological dis-homogeneity from their current specialisation prefer to take part in the development of new comers than to risk organisational confusion.

Particular care should be given to formal consortia among firms that are located in districts like Carpi. Consortia exist in different fields, providing different business functions: show rooms, data bases covering the supply of subcontracting work, as well as market research, etc. Their target is to share the costs of services that a small firm, by reason of its size, cannot internalise, and the market is not able to supply at reasonable prices. Large overheads require volume production and this is attained without losing the production flexibility and design responsiveness of every single small firm. Consortia are not-for-profit associations of firms which must be registered and have a board of directors elected by the assembly of members.

A first example is given by Video Moda. In Carpi there are 750 final firms each of one designing on average 147 models per year: a buyer cannot visit all of them. On the other hand, every small firm may not be able to pay its own agent to reach every single buyer. So, buyers visit the Video Moda office where they are shown slides and videos of a sample of member firms. They are then directed on to the firms in whose products they are interested. There is no attempt at quality control and at formal broker service: the office is purely an information centre. It conducts research on clients and on Italian agents. In its first full year of operation, 1988, it was visited by 200 buyers, 30 per cent of whom were from abroad.

A second example is "*Centro Dati Abbigliamento*", which performs a similar role for sub- contractors. From a desk located in the Carpi Chamber of Commerce, a single clerk runs a database on the sub-contractors who have joined the consortia. When a final firm calls, the Centro matches the final firm's requirements (type of machine, level of quality, kind of yarn, etc.) to the data bank and gives the names of five suitable sub-contractors with the capacity to fulfil the order. There is no quality control or evaluation mechanism because the Centro sees its task as that of a clearing house rather than broker.

A final example is given by the "Financial Consortium" in Carpi province. As is well known, banks prefer to secure loans with property, not through an assessment of potential competitiveness. Past accomplishments and property can be measured with precision, whilst information for measuring entrepreneurial capacity is not economically supplied in the market, particularly in the case of small firms. In fact, the information does exist, but the market does not provide trust to back it. The consortium provides an insider's assessment of entrepreneurial ideas at low cost, a strong incentive to pay back loans, and a means of recovering loan defaults. Member firms pay a fee which is combined with public contribution from local governments. They elect a board of 18 members composed by entrepreneurs. Any member firm that desires a loan go to the local branch of the trade association and obtain a report prepared and assessed by fellow business people: only their peers have the intimate knowledge of the individual and the industry. The report is forwarded to the board of directors of the financial consortium and referred to a subcommittee. If accepted by both the subcommittee and the board the application is sent to the bank with a loan guarantee. This method has changed the attitude and practices of banks with respect to artisan enterprises.

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4.2 The Emilia-Romagna and Valencia Region Cases

4.2.1 The problem

In Emilia-Romagna, as well as in the Valencia Region the problem that local actors have been confronted with in the last few decades was not one of industrial restructuring towards a more diverticalised structure of small specialised production units. On the contrary, such a structure was already in place. The problem was rather how such a structure was able to protect and increase employment and, consequently, what kind of employment and industrial policy would ensure it. If the conviction were that local productive systems of small firms are bound to be replaced by more efficient forms of industrial organisation, then any measure taken to help small firms and the existing employment structure would amount to nothing more than bolstering mechanisms prior to their inevitable extinction. In such circumstances, the most ambitious objective would have been to slow down the process of restructuring and to make it as painless as possible. By contrast, if those local productive systems aimed to maintain or even to increase their importance, any measures taken to assist firms and employment could be seen as support for a specific form of development.

The most prevalent ideas in the 1950s and 1960s were consonant in stating the superiority of large-scale firms. Besides, from the outset, the productive efficiency and the economic and political roles of small firms had been frequent topics in the debates on early industrial capitalism and many authors and parties argued at length about the inevitability of the changeover from small manufacturing to factory production concentrated in large plants. They held that, given the economies of scale involved in manufacturing -- mainly for energy generation -- productive units, in order to be efficient, would have to grow ever larger.

In Emilia-Romagna, at the end of the 1970s, after a long debate on the nature and characteristics of industrial districts or local productive systems of small firms, many of the original ideas were abandoned. A similar process happened later, at the beginning of the 1980s in Valencia Region. The circumstance was the reallocation of industrial policy competencies from the state to the region. In both cases, a series of studies -- promoted mainly by the unions in Emilia-Romagna, and by the local Chamber of Commerce in Valencia -- showed that in most regional industries the process of production could have been devised in small phases without losing efficiency and that each of these phases could have been efficiently operated by a small firm. Thus, at least a part of regional leaders and practitioners were finally persuaded that small firms in domestic local productive systems were almost always potentially efficient and capable of using relatively sophisticated machinery. The problem they state, at that point, was: to what extent are local systems capable of evolving new techniques of production or new products? and, consequently, to what extent do measure of employment and industrial policy have to change substantially the characteristics of the local fabric or, on the contrary, to respect its structure based on many small complementary firms?

Three observations were clearly pointed out, in Emilia[44], in order to suggest an answer to these questions. The first one had to do with competition. In the structure of local productive systems, researchers said, there are, in each phase of the process of production, many firms competing with each other and no seller or buyer squeezing power. From these competitions derives the stimulus to innovate: 'lazy' subcontractors are rapidly excluded from the market. But from this competition comes a possibility to innovate, as well: buyers cannot impose prices on sellers and reduce their profits (and vice-versa), thus the latter are enabled to make the necessary investments.

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44. An important role was played on this occasion by a group of local or, at that time resident, researchers: among others, Sebastiano Brusco, Vittorio Capecchi, and Charles Sabel.

The second observation concerned co-operation in the relationships between clients and subcontractors. Whilst in classical Fordist large firms research and development departments work out projects in detail and then transmit them to the production side through hierarchical channels, in small firms a single idea goes through all the phases of its development in a continuous confrontation, inside, among technicians and workers and, outside, with subcontractors and clients. Instead of separating someone who has an idea from the person who will have to implement it, these small firms reconnect conception and execution in a way that keeps production costs under control and enables a series of modifications and adjustments to be made to the product.

A final observation had to do with the mechanism that regulates such a delicate mix of competition and co-operation, that, of course, is permanently threatened by all sorts of conflicts between different groups within the local economy: buyers and manufacturers, employers and workers, skilled and unskilled workers, etc. At the very hart of these local productive systems of small firms there are two types of social institutions. On the one hand, there is the set of social relations that co-ordinate the actions of men and firms. A population that used to live in the same area, with weak migratory fluxes, and a low social polarisation develops a "sense of membership", a sense of belonging to a socio-cultural entity: a "community", that such populations estimate positively and to which it adheres with affection. Time has sedimented interests, purposes, beliefs, and common rules that have been translated into "conventions", and these conventions encourage and regulate the particular relations of co-operation among firms and inside the firms. On the other hand, time has incubated institutional mechanisms for the local resolution of collective conflicts: local as well as regional "tables" around which a wide range of associations (trade associations of large or of small firms, unions, associations of co-operative, associations of municipalities) arbitrate disputes.

In short, conventions sustain the trust that is necessary to co-operate. Co-operation, in turn, is particularly useful in the production of highly specialised products and services in an environment of rapid technical change. A controlled competition -- within as well as among firms -- stimulates and makes possible innovation.

Local actors -- after a long, difficult, and non-unanimous reinterpretation of their collective past -- came to the conclusion that this ensemble of elements had surely helped domestic industry. In Emilia-Romagna, examples abounded of regional sectors that in few decades have gradually upgraded their competitiveness and have survived competition from newly industrialised countries. Thus, most local actors agreed that the specific characteristics of the local fabric were particularly suited to use as well as produce innovation, and pressure toward concentration and more integrated firm structures were not necessarily justified.

Similar results were attained in Valencia where an active group of practitioners focused its attention on innovative models of industrial policy to upgrade and regenerate an economy based on small firms and traditional' sectors. Their clear aim was to provide the new autonomous region with a coherent framework of measures. Although few examples of innovative measures were at hand at that time, and no defined model existed -- in Emilia there were either good practices or nothing more than some innovative experiments, and Denmark developed its programme five years later -- they started elaborating a serious and coherent hypothesis.

These results scaled-down the original questions in the following way: as far as completely new technologies appear in the realm of the typical local sectors and increased competition on international markets asks for up-to-date marketing and sophisticated technical services, how will these technologies and services diffuse within the local fabric? How can employment and industrial policy help this process?

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The underlying idea was that domestic local productive systems of small firms -- as well as other forms of industrial organisation -- have specific advantages and disadvantages; they can be both dynamic and slow.

They are dynamic because they are extremely capable at maximising initiatives and ameliorating existing skills to produce -- by means of trial and error -- those continuous improvements in product differentiation and those 'incremental' innovations that are crucial in high-conception industries. In fact, in markets for clothing, footwear, furniture, toys, and micro- mechanics differentiation of demand and competition about quality, variety of types, and fashion is clearly increased, with a resulting differentiation and multiplication of products according not only to durability or ease of care, but also with quality standards, a personal lifestyle, or taste, or fashion influences[45]

They are dynamic also because they are able to quickly orient production on a few successful items within a wide range of new and seasonal products. Local small firms have flexible equipment that minimises downtime during changeovers. Moreover, they have an organisation of labour in which the tasks are less strictly defined and workers are more actively involved in problem solving (multitasked and multi-skilled workers). As such, they can manage to "reduce the risks" of choosing designs that do not fit any of the requirements of the market. These requirements are the result of a product-led competition in which there are winner and loser "design making firms". The latter[46] have a second chance: with production methods of 'quick response' they can try to arrange their production under the influence of early-season sales experience. In this case, the nearer it is possible to get to the start of the retail season, the smaller will be the degree of error in design. In short, lead time reductions permit manufacturers to delay any decision which narrows the range of future possible decisions, so that options are kept open until the latest information is available[47]

However, domestic local productive systems of small firms do have specific disadvantages that come from the fact that they are slow. As far as technical breakthrough and the rapid acquisition of completely new skills are concerned, they need more time to adapt their working practices. They are locked in a particular organisational and technological trajectory. Consequently, community and regional leaders are looking for tailor-made policies to deal with such problems as the introduction of electronics in mechanics or CAD and CAM systems in clothing, the adaptation of water leather-cutting machines for small batches of production, the diffusion of information about prevailing trends in fashion[48], standards and quality requirements for export products in distant markets, and -- more generally -- all the initiatives that usually imply huge expenses in applied research and marketing.

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45. Of course, in certain markets or segments of markets, basic goods with more stable demand, or sales distributed more regularly throughout the year still exist and they are less affected by problems of design, organisation, and time. But, generally speaking, competition is increasingly affected by fashion contents and seasonal pattern of demand for the products. Very often, the winners are firms that can offer higher quality, fashion, shorter lead delivery, and reduced product development times.

46. As well as 'Pronto Moda' type of firms: "fashion taker firms" who decide to take their main design decisions and to prepare their own collection only after having looked around for prevailing fashion trends.

47. It should be noticed that time is not only important for production efficiency. Of course, -- as was underlined in mass production -- savings in time generate "economies" in terms of lower financial costs of smaller inventories, of space, indirect labour, and they induce continuous innovation in production organisation. But time in high conception industry is also important to "reduce" the risks.

48. Of course, if properly used, fashion trend information can improve the development of product design; but also, if collected systematically and quickly, after the season starts, they can help reduce the risk and reinforce the advantage of quick response methods of production.

4.2.2 The solution

This perception of local productive systems as "strong and slow giants" suggests two contemporary fronts for action: the diffusion of new skills and the provision of services that are not yet available (at least at the right quality and in time) at the local level.

The first front is actually the more problematic one. It has to do with the fact that in local productive systems of small firms the ability to innovate depends on the collaboration of hundreds of people with different roles, but who play their role together, with a high level of competence and knowledge of the production process. In other words, the functioning of the production process as well as the transfer and acquisition of skills has to do with many heads instead of one. We have seen above that in the past large firms contributed to the diffusion of these skills in the local fabric and played the role of a sort of pedagogue. In a large "amphitheatre" they spread è similar "idioms" and a similar "grammar" in order to permit technical "discourse" and co- operation. But we have also seen how difficult, long and uncertain it is to follow such a path. We can now add that in order to facilitate the diffusion of skills and develop employment, local productive systems can clearly put large firms aside and focus on what they surrogate; that is, qualified technical high schools. These types of schools were actually located in many Third Italy towns. They have helped the diffusion of the technical knowledge that today is spread all around the region, too. The most famous among them have been: the Aldini-Valeriani in Bologna, the Corni in Modena, the Alberghetti in Imola, the Taddia in Cento and the Apprentices School of the Reggiane. These institutes, for example, helped a capillary diffusion of knowledge in mechanics in two ways: by means of training courses and by carrying out the function of rudimentary centres of service -- in the sense that former students can ask advice and information to their ancient teachers. Moreover, given their high profile, they contribute to assigning a high status in the social structure to technical knowledge. Therefore, we can assert that a new "idiom" and "grammar", much needed by the apparatus of production, can be introduced by schools.

This way of working towards a solution to this problem has been clearly identified and is periodically discussed. However, it faces some important obstacles. First of all, national legislation regarding secondary education is extremely slow in reforming curricula and structures, and moreover it sometime lacks general outline and principles. Secondly, local experimental courses and personal teachers' engagement have often produced valuable initiatives and even great enthusiasm, but they remain too limited in numbers so to reach the desirable sedimentation of new skills in all the social fabric. Finally, vocational courses are often too short to provide the basic knowledge to be able to use new technology, as electronics applied to mechanics, or new organisational principles, as total quality, in a creative way. Moreover, many vocational crosses tend to be principally devoted to service activity or to subject as entrepreneurial capacities or general notion of marketing and exporting so to answer a vaguely defined demand coming from firms. The point is that serious reflection is still needed before a strategy can be worked out. But it is anyway clear that the debate on updating technical education in local productive systems of small firms should assume the same public importance as that of new university and infrastructures[49]

The second front for action is the one on which the experience of both Emilia-Romagna and Valencia have developed an important knowledge and a specific model of industrial policy. It concerns those services that help firms to improve their methods of management and take advantage of the opportunities offered by new technologies. Why should be needed a policy to provide and diffuse these innovative services?

49. These are points that Sebastiano Brusco has regularly underlined.

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Given their size, small firms are not able to internalise some expertise -- as well as some phases of production -- and so they buy them instead. They can obviously rely on the market to establish backward and forward relationships, but in some cases the appropriate supply does not yet exist: no private firm is prepared to provide the necessary information and yet its widespread use is essential for the welfare of the community and the growth of employment. The local productive system as a whole needs greater knowledge and expertise. The capacity to innovate of the system depends on the collaboration of hundreds of firms with high competencies, but the system finds this hard to acquire.

One solution may be to create consortia among firms so to internalise in a collective way the expertise that is missing. This is what the Danish strategy wants to encourage, and national and regional Italian governments have promoted for years. Large overheads require volume production and this is attained by several firms that join together in a common association, without losing their autonomy as well as their original production flexibility and design responsiveness. However, the creation of consortia does not seem able to meet all firms' needs. There are two different approaches that may be tentatively followed to explain why the market or market-driven consortia do not always produce the services required.

The first approach underlines the role of ignorance: the fact that although the need for some services is there, the awareness of it is not. The 'strong giants' needs some correction in its trajectory and he is 'slow' in undertaking it. Thus, there is insufficient solvent demand to sustain either a private supply of services or the creation of a network that attains the scale for an efficient provision of them. In these circumstances, it may be said that any distinction between selling information and training is blurred. Providing information means assisting firms in transforming the vague perception of a need into solvent demand. In practice this requires a centre that diffuses information until the moment when acknowledgement of its importance is understood by the industrial community. At that moment the need for public provision of services will be over and the market will be left to operate.

The second approach underlines the role of market incentives in promoting the supply of information. Information has a specific nature. It is a collective (or non-rival) good, i.e., in normal conditions it is not destroyed during its use and once it is produced, it can be used by other consumers without requiring new production costs. Moreover, information is easy to codify and stock. Finally, it can be very expensive to exclude somebody from using it (in this case it has the status of a public good). Now, consumers' willingness to pay an information can be positively related to the length of time during which this is protected, (so as to become at least temporarily exclusive). For similar reasons, producers of information may find more convenient to sell at high price to few customers than cheaply to many, because the willingness to pay of the few more than compensates the loss. If - as in some circumstances - no or little protection is economically feasible, if many can acquire the same information by means of a low-cost duplication, and so if no-one is in a position to derive profit from the sale of it, then no-one is prepared to commit the resources necessary for its production. In short, it is difficult for private firms to sell on a commercial basis a non-rival good, easy to codify and to transfer, and not easily excluded from public (i.e., other consumers) use. Every firm is ready to use it, but few or none to pay for it, and the advantage of producing it less than compensates the cost. The argument can even be strengthened. Let us assume that the producer of the information is able to profit from it, but equally that free riding is possible. Then nobody will move, each waiting for the other.

According to this second approach, local productive systems of small firms are if anything handicapped by their transparency. Rooted in the territory they are located in, firms share economic relationships and the entrepreneurs themselves social relationships, so that in such a homogeneous community it is not possible to hermetically cut off others from access to the information produced or bought by any one of them. Thus, public provision of services is imposed by the dense social links which constitute the nature of the district.

These two different approaches converge in requiring the creation of agencies to adapt to small firms and transfer technologies and information, the aim of these latter being to facilitate and accelerate the introduction and diffusion of new techniques and thus meet the basic problem of the shortage of expertise and the market's inability to respond to this shortage. Both approaches also require that the new technology be translated into terms comprehensible to small firms and that it be introduced in the most painless way possible. They diverge, however, in identifying causes and in suggesting solutions. In the one case, the imperfection of the market is temporary, due to its currently limited extension, but solvent demand will emerge at a given moment, a private firm will then be able to operate profitably and the need for public intervention will disappear. In the other case, the problem is the opposite: there are many consumers of the information but few of them pay for it. So, first, information is a public good and cannot be supplied other than by public agencies; second, there is no reason why things will change in the future. Of course the two different approaches are not mutually exclusive; both can help in explaining the need for public provision of services. But a different composition in terms of the weight of one or the other affects not only the role of the state in respect to small firm systems but also the mode of growth of these systems. In real experiences, the orientation that has prevailed is one of stimulating demand so to create a market for a future private provision of services.

4.2.3 The strategy

The strategy is based on the creation of strong and autonomous quasi-public centres (the name in Emilia) or institutes (the name in Valencia) which are specialised in support services for the prevailing industries of the local productive system in which they are located. They formulate effective policies tailored to local needs and provide services which are not supplied by market mechanisms alone. The practical realisation of these institutions is different largely in intensity. Italian regions have been confined by severe budget restrictions to taking initiatives that could be implemented with limited funding. Moreover, up to now these regions have very little power of decision in industrial policy -- indeed almost none. This is not the case for Valencia where there is complete administrative autonomy and every year ten times the resources committed in Emilia-Romagna are spent by the Valencia regional government. However, the structure and functioning of the centres is almost the same in management and type of measures.

Apart from the most valuable practical insights, there are at least three key features in these experiences to be underlined. Two of them are almost evident at this point. The first is the unit of intervention, which in this case is not as much the individual firms or the specific network in which they are organised, as the local productive system itself. Services are designed to be supplied to the many firms in the system and the aim is to increase the level of knowledge and the introduction of new skills within the whole local fabric. Moreover, the collective supply of services can be seen as a process to strengthen co-operation, redesigning the identity of each individual actor to enable participation in the overall network.

The second feature has to do with the nature of the measures. This strategy gives a clear priority to direct provision of services instead of financial incentives to buy services. This is not a usual trait of industrial policy measures, given that the encouragement for real services is always counterbalanced by a political practice that relies on monetary incentives and subsidies, reinforced by the belief that in every circumstance the firm is the best judge of its own destiny. According to this view, a direct public intervention damages the optimum composition of individual choice and a good policy is one designed to increase profits of individual firms, paying part of their investments or reducing the costs of interest for loans. The point is that this view is unhelpful in circumstances where doubt can legitimately be cast on the ability of otherwise efficient firms to obtain information and make choices concerning the technology or services they might wish to buy.

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The third key element is less evident but probably more important. It concerns the actors that should be involved in the policy. From the above mentioned points, it is clear that some of these actors have a public profile, while others operate in the private sphere. At the core of this strategy there is the conviction that success is linked to the direct participation of not only public but all relevant local actors. They are expected to constitute a more or less formal policy network within which solutions to common problems can be jointly discussed, discovered, and sustained. Several arguments support this figure. First of all, given that local productive systems of small firms display a large diversity in economic performance, internal organisation and social complexion, no standard model of development and consequently of policy can be drawn, and a close and permanently updating knowledge of the specific local situation is needed. In these circumstances, a panel of knowledgeable people is surely crucial. Given the large number of firms, institutions and consequently initiatives that take place in a local system, a local "table" of negotiation and co-ordination is needed. This can lead, though not necessarily, to the careful integration of already existing related services, such as training, technology, financing, and market analysis that are provided by banks, trade association, community collages, universities, unions, foundations and so on. A third argument concerns, in particular, the active participation of firms themselves in organising the provision of services. In local productive systems, the functioning of the production process as well as the transfer and acquisition of skills have to do with many heads instead of one. Every structural change in organisation must be accepted and practised by many firms. The mechanics of regulation is certainly not based on the hierarchic transmission of the large traditional firm. It is rather conditioned by the need to spread skills, common knowledge, technical idioms. In such a structure, new skills and services cannot be injected through commands, but must be diffused by means of consensus. Plans of action developed only by experts and the public sector and suggested without an actual participation of entrepreneurs and trade associations can face resistance in being utilised. Last but not least, given the limited visibility that local productive systems have with national governments, a constituency to sustain the policy process, and to involve trade associations and individual entrepreneurs is required.

For these reasons, centres and institutes have developed a specific institutional nature. They are quasi-public entities managed by a group of experts, knowledgeable people, officials from public organisations, but also representatives from local governments, trade associations, sometimes unions, and entrepreneurs who take an active part in the process. In both the cases, in Emilia-Romagna and in Valencia, the process has gone even further: the so-called "cross fertilisation" practice has prompted some entrepreneurs and leaders of local initiatives and centres to participate in committees in charge of general regional employment and industrial development policy.

5. CONCLUSIONS

We have seen that local actors would like to speed up the process of policy making for local productive systems, either because the systems are in place or they are "desired". On the one hand, where they exist, local policy-makers and practitioners are asking themselves how it is possible, given their specific conditions, to further employment and industrial development and strengthen competitiveness and the ability to innovate. On the other hand, where the local economy is based on simple agglomerations of small firms with low economic performance, low levels of inter-firm relationships, and great difficulties in forging common interests among social groups, local policy makers and practitioners are looking for measures to stimulate the transformation of groups of small firms into systems of small firms. In so doing, they are pushed by the difficulties and poor results of traditional policy for geographic re-equilibrium, and often pulled by the economic and employment performance of exemplary industrial districts that they wish to emulate.

These towns, rural districts, and regions have learnt to think globally and act locally and are key actors in developing the competitiveness of local firms. The more successful they are, the more they know

they must continually feed their own capacity to bolster the development of their local fabric of small firms. To do that they solicit the enaction of innovative policies, mutual learning and regional alliances. Currently, at the local level, there are initiatives that can be considered as experimental and that suggest issues around which a coherent framework for appropriate policy measures can be constructed. Of course, no "ready made" model is as such available. But a deep mine of experiences and ideas is there waiting to be exploited.

So far, the analysis has been focused on two different strategies that have been induced by competitive challenges. On the one hand, there are governments that try to stimulate small firms to practice a structural change based on de-verticalisation of production and to adopt co-operative behaviour based on formal networks that can lower fixed costs. On the other hand, there are local and regional governments trying to diffuse new technology and services in the local business fabric in order to assure further innovations. Both types of actions can be part of a fully developed industrial policy based on networking and technical centres.

Nevertheless, they differ in some important and related aspects. First of all, they are based, at least in part, on different visions of competitiveness. In one case, the focus of the strategy is on economies of scale and the ability to achieve manufacturing efficiency, while the other promises a permanently innovative local economy that competes with mass production by means of dynamic economies of scope -- i.e., economies based on learning from past experiences. The Danish strategy has the merit of underlining that economies of scale can be attained not only by encouraging the formation of world-market champions through mergers and acquisitions, but also through co-ordinated small and medium-sized firm strategies. On the contrary, some researchers have pointed out that a possible limit is due to the fact that the problem of adjustment is not merely a matter of scale. In large part it is the ability to reintegrate conception and execution by means of an organisation in which authority is decentralised to small operating units, to small profit-centres.

Secondly, the two stylised models differ in the place that is assigned to competition and co-operation among small firms. On the one hand, local competition is limited by means of formal agreements and stable links that remove uncertainty and make larger investments possible. On the other hand, local competition is somehow preserved, given that it guarantees possibilities as well as stimulus to innovate in all the phases of the production process, while stable collaboration risks to standardise relations and processes and to compromise learning. From this, two different approaches to the idea of trust emerge. It is clear for both the approaches that without trust any party can hold up the others. As Sable underlines, a firm can entice a collaborator into dedicating resources to a joint project and then refuse to commit the necessary complementary resources until the terms of trade are re negotiated in its favour. Thus, no-one will risk moving first and all will sacrifice the gains of co-operation for the safe, if less remunerative, pursuit of self-interest. Now, in the first approach the need to build trust is removed by means of formal and quasi-vertical integration -- a kind of governance of the productive systems. The second approach, meanwhile, tries to preserve the range of possible forms of partnerships, and consequently faces the complex problem of identifying under what conditions particular relations among firms can be seen as trustworthy.

The problem of building trust is closely related to the third difference between the two described approaches: the operation of local public or quasi-public employment and industrial institutions. On the one hand, the state's role is not at issue given that the strategy is based on monetary incentives and training of private brokers whose motivation is market-driven. Moreover, there is no such explicit need to investigate the local dimension for policy, given that networks are not necessarily locally based. On the other hand, the reform of public sector institutions engaged in employment and economic development is obviously on the political agenda, given that a new crucial unit of intervention has been identified: a local productive system composed of clusters of firms as well as social and institutional actors.

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It is clear that if some kinds of general conclusions are to be drawn then more empirical evidence and a framework of analytical criteria are required. In this respect, it is important to enlarge the analysis to other areas and countries, in particular those in which similar strategies have been experimented.

Nevertheless, from the information at hand, it seems clear that at least two dimensions are missing from the existing experiments, valuable though they certainly are: a stable link among them so that they can learn from each other, as well as a closer knowledge of them enabling conclusions to be drawn from the various specific experiments.

The recent OECD Conference in Madrid clearly recognised the call for mutual learning coming from towns and districts and stated that the moment to build regional alliances among local productive systems of small firms is approaching. The conference proposed as a first step to build an international "table", a "club", a "network" of local productive systems of small firms designed to promote a coherent framework of policy measures.

On the basis of the present analysis, initial tasks of this club could include the identification of:

- the crucial features of local productive systems that should be taken into account in developing and implementing appropriate regional and local policies,

- the conditions under which regional and local policy for fabrics of small industrial firms can help a community's capacity for regional employment and industrial development,

- the conditions under which local systems of small firms can take part to a regulatory process undertaken by national and supranational institutions (i.e., how an industrial district can contribute to the setting of international technical standards, and how the actual implementation of the standards can be assured, etc.),

- the map of local productive systems of small firms to be considered as a unit of political action.